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**The characteristics and effectiveness of treatment for young sex
offenders in Australia and New Zealand: A systematic review**

This thesis is presented for the degree of
Master of Criminal Justice by Research

James L. Finney

School of Arts and Humanities

Edith Cowan University

2021

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Abstract

Sexual offending by young people presents a serious and devastating issue effecting victims, families, and wider society. This has led investigative efforts to understand the efficacy of treatment programs to cease or at minimum reduce sexual recidivism. Evaluations examining treatment efficacy have predominately been conducted in the United States and Canada, with limited research focused exclusively on young sex offenders in Australia and New Zealand. To address the paucity of information, a systematic review of young sex offender treatment research in Australia and New Zealand was conducted. The systematic review employed a comprehensive search strategy and rigorous vetting procedure, which resulted in a summary of data from eight studies of 10 treatment programs. Average across those studies, the sexual recidivism rate was lower for the treatment groups ($n = 75$, 5.97%), compared to dropouts ($n = 25$, 10.92%) and treatment refusers ($n = 39$, 6.93%). Similar results were obtained for studies providing information on non-sexual recidivism. Efficacy however was difficult to ascertain as most evaluations did not report all required data. Therefore, gaps in knowledge and the associated methodological issues of the included studies are outlined. The outcome of this review details recommendations for treatment evaluations in criminology which will allow for more detailed and nuanced information on treatment efficacy. It is anticipated that results and recommendations will guide future efforts to evaluate treatment for young sex offenders, particularly regarding young Indigenous sex offenders.

Acknowledgements

I would like to thank my supervisors Dr. Natalie Gately and Ms Suzanne Ellis for your assistance, guidance, and feedback during this process. You have helped me during the transition from undergraduate to postgraduate, and for that I thank you. But most of all, thank you for making me feel like a friend. Your help during this process will never go unnoticed and never be forgotten.

I would also like to thank my beautiful wife, Erin Finney. We started this process one and a half years go as boyfriend and girlfriend, with 6-month-old Silas. We now finish this, husband and wife, with a new addition to the family – baby Saul. The support you have shown me during this process is just one of the many reasons I married you. You and the boys will forever be my favourite team – The Finney Four.

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Abbreviations

NZ – New Zealand

WA – Western Australia

CBT – Cognitive-Behavioural Therapy

MST – Multisystemic Therapy

SMS – Maryland Scientific Methods Scale

New Street – The New Street Adolescent Service (New South Wales, Australia)

Mary Street – The Mary Street Program (South Australia, Australia)

GYFS - The Griffith Youth Forensic Service (Queensland, Australia)

MAPPS – Male Adolescent Program for Positive Sexuality (Victoria, Australia)

SOP- The New South Wales Sex Offender Program (New South Wales, Australia)

PSJJ – Psychological Service Branch of Juvenile Justice (Western Australia, Australia)

OMIR – Not Just ‘Old men in raincoats’: Evaluation of SAFE Auckland, WellStop
Wellington, and STOP Christchurch (New Zealand)

TPAR - Te Poutama Ārahi Rangatahi Residential Facility (Christchurch, New Zealand)

Definitions

1. Young Person: A person between the ages of 10 and 18 years.
2. Young Offender: A young person charged or convicted of an offence under a criminal code.
3. Sexual Offending: Sexual assault and related offences.
4. Hands-On Offending: Contact sexual offending that can include rape – oral, vaginal, and anal; attempted rape; child molestation; object penetration that is either vaginal or sodomy; indecent assault, and genital oral contact.
5. Hands-Off Offending: Non-contact sexual offending, that can include exhibitionism, child pornography, wilful exposure, bestiality.
6. Indigenous: Australia Aboriginal and Torres Strait Islander and New Zealand Māori People.
7. Host Database: Bibliographic database which is the host to numerous databases.
8. Grey Literature: Literature that is not published on, or retrieved from, an academic database (For example, unpublished theses, books, government websites, and conference abstracts).
9. Information Source: A research study or article.

Introduction

Background

Sexual offending by young people presents a serious and devastating issue effecting society; an issue that may be underestimated due to the under-reported nature of sex offending. Until the 1980s there was little research on the issue of young sex offenders as it was hypothesised that these crimes were a product of sexual experimentation and curiosity (Oxnam & Vess, 2008). Therefore, the attention of academics was primarily directed towards the sexual offending behaviours of adult populations. It is now known that young people are responsible for committing a substantial proportion of known sexual offences (Smallbone & Rayment-McHugh, 2013). However, academics continue to note while the literature evaluating the effectiveness of sex offender treatment for adult populations is extensive, the comparative body for young sex offenders is limited (B Kim et al., 2016). Investigative attention is, therefore, continuing to grow around treatment efficacy used to reduce or cease sexual recidivism among young people.

Treatment for sex offenders is designed to reduce sexual recidivism, create a positive change and identify associated changes in recidivism post-treatment (Gallagher et al., 1999; Hanson et al., 2002; Lösel & Schmucker, 2005). It is expected that better treatment outcomes will inevitably result in reduced recidivism, sexual and general, and have the potential to change other aspects of the young person's life, such as lifestyle stability, educational attainment, and employment. Evaluations examining the efficacy of treatment for sex offenders have been predominately conducted in the United States and Canada (Kettrey & Lipsey, 2018; B Kim et al., 2016; Reitzel & Carbonell, 2006; Walker et al., 2004; Winokur et al., 2006) but limited research has focused on Australia and New Zealand. While sexual offending by young people is less prolific than other crimes in Australia and New Zealand, it has substantial negative ramifications for victims and their families, and also has financial

implications for taxpayers (Australian Institute of Criminology, 2018; Department of Justice, 2019). Additionally, the Australian Government recognise that the prevention of re-offending is the most effective way to reduce crime (Department of Justice, 2019).

Study Rationale

The period between adolescence and young adulthood is pivotal for successful development, particularly for young people at risk of negative or delinquent outcomes. During this time, young people continue to develop in important domains, such as social competency and psychosocial behaviours, which are linked to perpetrating sexual offences (Riser et al., 2013). While only a minority of young sex offenders continue to sexually offend in adulthood (Knight et al., 2009; Riser et al., 2013), it is important ensure treatment is successful in achieving positive behavioural change. Treatment efficacy is measured through recidivism information; that is, sexual offending that occurs post-treatment during a follow-up period that may span from youth to adulthood. Most treatment for sex offenders is not 100 per cent effective in ceasing all sexual recidivism and, therefore, provides a clear indication that all program participants do not derive the same benefits from all programs.

Statistics on Youth Crime

Australia

The statistics on youth crime in Australia and New Zealand are present separately as they are reported in different ways. The minimum age of criminal responsibility in Australia is 10 years of age, with young people being prosecuted as youth until the age of 18 years (Crimes Act 1914 (Cth) ss 4M, 4N; Criminal Code Act 1995 (Cth) ss 7.1, 7.2; Criminal Code 2002 (ACT) ss 25, 26; Children (Criminal Proceedings) Act 1987 (NSW) s 5; Criminal Code Act 1983 (NT) ss 38(1)–(2); Criminal Code Act 1899 (Qld) ss 29(1)–(2); Young Offenders Act 1993 (SA) s 5; Criminal Code Act 1924 (Tas) ss 18(1)–(2); Children, Youth and Families Act 2005 (Vic) s 344; Criminal Code Act Compilation Act 1913 (WA) s 29). Official

government statistics in Australia indicate that 49,180 young people were investigated by the police, a rate of 2,045 per 100,000, during the 2018 and 2019 reporting period. The principle charges were acts intended to cause injury, theft offences, illicit drug offences, and public order offences (Australian Bureau of Statistics, 2020). Table 1 provides an overview of the most common offence types committed by young males and females in Australia.

Table 1

Principle Offence Type by Youth in Australia

	Male		Female	
	N	P	N	P
Acts intended to cause injury	5,840	472.8	3,565	304.7
Theft	4,087	330.9	3,400	290.6
Illicit Drugs	3,922	317.5	1,294	110.6
Unlawful entry with intent	3,277	265.3	758	64.8
Public Order Offences	3,105	251.4	1,166	99.7

Notes. N = Number of offences. P = Offence occurring per 100,000 individuals.

The offending behaviours of young male and females in Australia is inclusive of young Aboriginal and Torres Strait Islander People (thereinafter Indigenous). The Australian criminal justice system is over-represented by young Indigenous People (Department of Corrections, 2007; Department of Justice, n.d.). Statistics on young Indigenous People in Australia who are processed by police are not categorised by offence type. Therefore, Table 2 presents the total number of Young Indigenous offenders in comparison to young non-Indigenous offenders in States and Territories providing the information.

Table 2

Young Indigenous and non-Indigenous Offenders

	Indigenous		Non-Indigenous	
	10 – 14	15 – 18	10 – 14	15 - 18
New South Wales	3,254.7	7,814.7	698.7	2,593.3
Queensland	6,184.3	12,992.9	792.5	3,391.3
South Australia	5,016.7	12,075.8	601.1	2,212.9
Northern Territory	3,409.6	10,125.7	126.5	1,026.4
ACT	1,409.4	5,681.1	303.3	1,343.0
Western Australia	-		-	
Tasmania	-		-	

Notes. Numbers are presented per 100,000. Categories are provided a (-) when information is not provided.

It is evident that rates of offending are high for acts intended to cause harm, illicit drugs, and public order offences and the rates of sexual assault and related offences, such as non-assaultive sexual offences, are considerably lower. These offences, however, have a significant effect on the victim and their family, the offender's family, and wider community. During 2018 and 2019, young people were responsible for 15.73 per cent of all sexual and related offending in Australia (see Table 3). Young males accounted for 84.14 per cent of all sexual or related offences committed by young people in Australia (Australian Bureau of Statistics, 2020).

Table 3

Sexual Assault and Related Offences 2018-19

	Number	Per 100,000
Male Youth	1,141	92.4
Female Youth	215	18.4

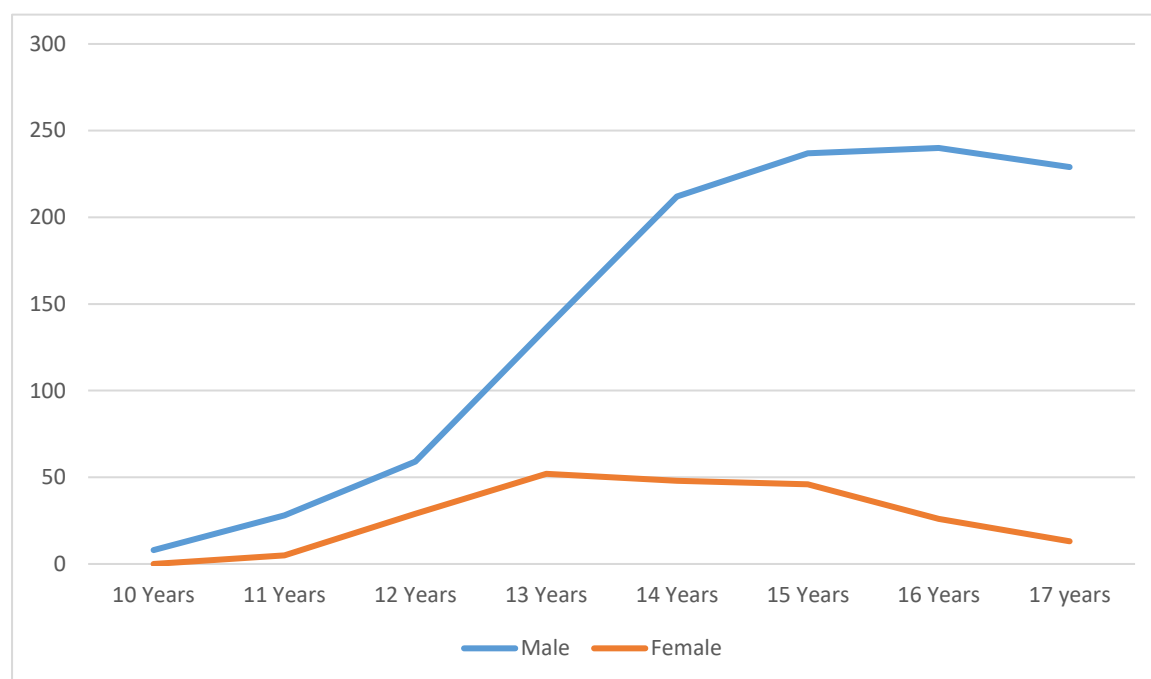
All Youth	1,356	56.4
All Offenders	8,619	39.2

Notes. “All offenders” is young people and adults combined.

Statistics show that sexual offending by young males coming to the attention of police slowly increase from 10 years of age, peaking from 12 years (see Figure 1). The peak continues until the ages of 15 and 16 years, and slowly decreases thereafter. Young females see an increase from age 11 to 13, followed by a subsequent decrease.

Figure 1

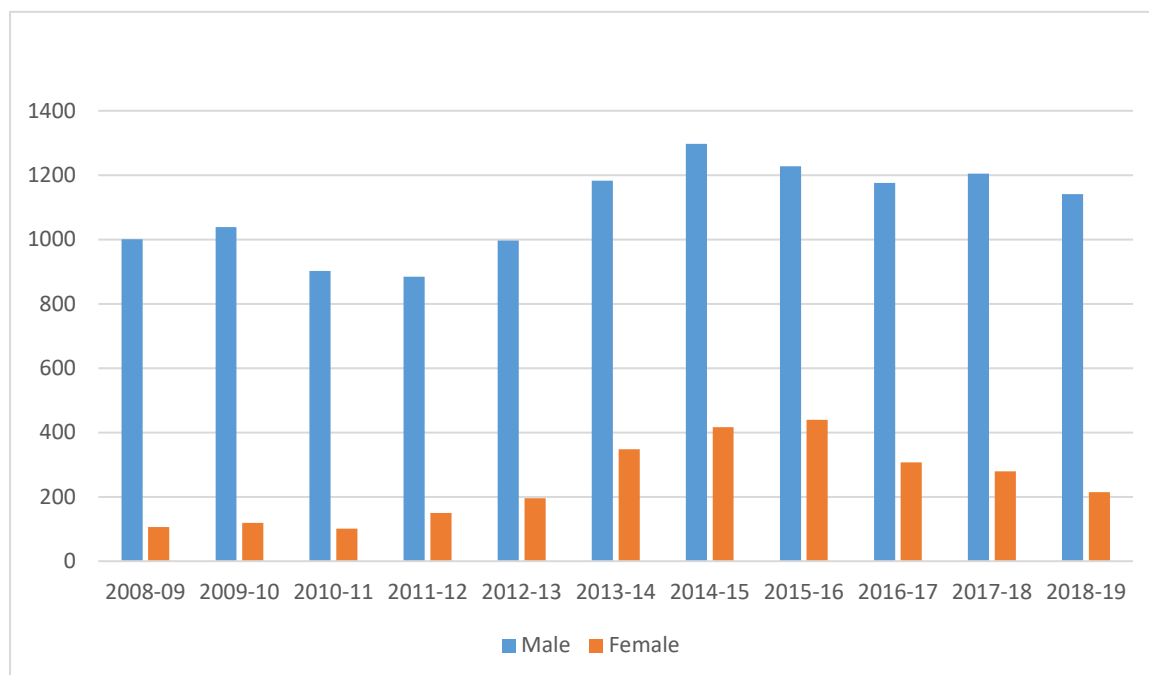
Sexual Assault and Related Offences in Australia



The rate of sexual assault and related offences by young people in Australia has increased since the 2008-09 period. There was a peak in this offending behaviour in the 2014-15 period for males and 2015-16 period for females, the number of offences remains relatively consistent. Figure 2 provides a visual representation of sexual assault and related offending by young males and females between the age of 10 and 18 in Australia from 2008 to 2019.

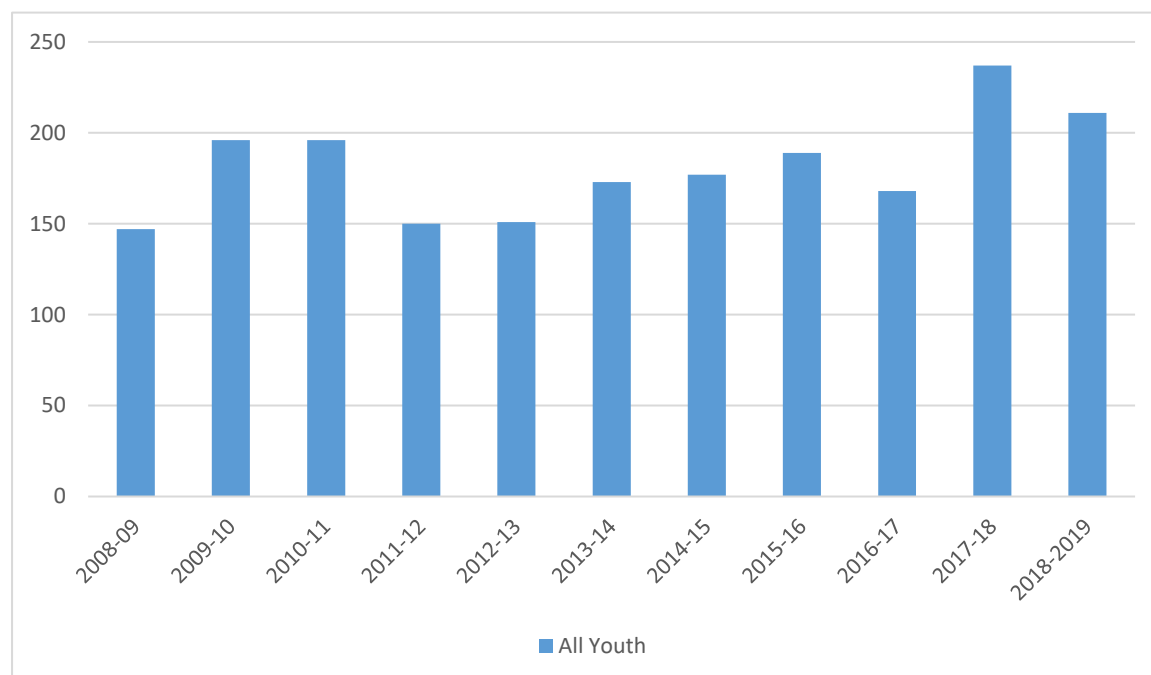
Figure 2

Sexual Assault and Related Offences in Australia (2008-2019)



The occurrence of sexual assault and related offences by young people was most prevalent in Queensland (106.6 per 100,000) and Western Australia (82.8 per 100,000). The present thesis was conducted for the Department of Justice in Western Australia, who wanted a focus on sexual offending by young people in Western Australia. Sexual assault or related offending has moderately fluctuated in Western Australia since data collection began in 2008-09 (see Figure 3). However, during the 2017-18 period a peak in offending has occurred and remained high during the 2018-2019 period.

Figure 3

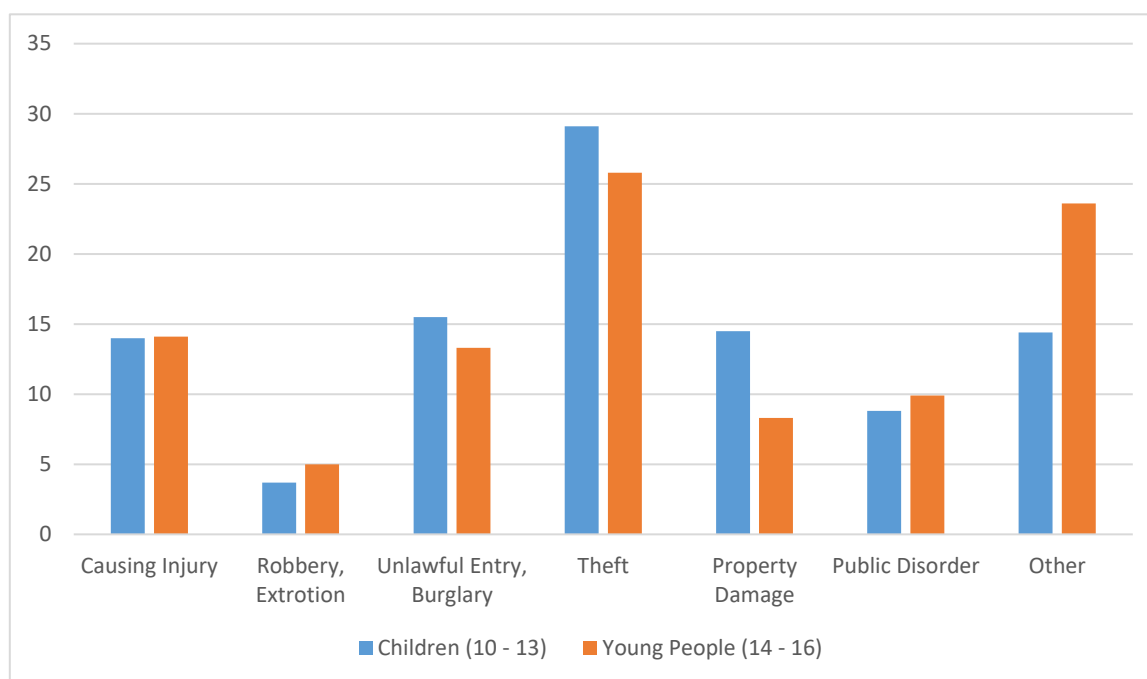
Sexual Assault and Related Offences in Western Australia***New Zealand***

In New Zealand young people between the ages of 10 and 17 years of age can be charged with an offence (Children, Young Persons, and Their Families Act 1989 section 272, 1, a; New Zealand Bill of Rights Act 1990). Official statistics provided by the New Zealand government are divided into two sections: children aged 10 to 13 years and young people aged 14 to 16-17 years (as of July 1st 2019, 17-year olds became a part of the youth justice system in New Zealand – charged filed prior to this date are ‘adult’ charges). In New Zealand, people aged 18 years or above are charged as adults. According to the Ministry of Justice (2019), offending rates measure the volume of children who Police take proceedings against for allegedly breaking the law, compared to total populations of the same age. Offending rates by young people during 2019 were 2,330 for children (93 per 10,000) and 5,623 for young people (312 per 10,000) (Ministry of Justice, 2019b). Children between the age of 10 and 13 years predominately came to the attention of police for theft, followed by

unlawful entry/burglary, property damage, other offending, and causing injury. There is no definition provided for the “other offending” category. Like children (10-13) in New Zealand, young people between the ages of 14 and 16 are coming to the attention of police for theft. Offending behaviour by this cohort is followed by other offending, causing injury, unlawful entry/burglary, and public disorder (Ministry of Justice, 2019b). Figure 4 presents the percentage of offending by children and young people in New Zealand.

Figure 4

Offending by Children and Young People



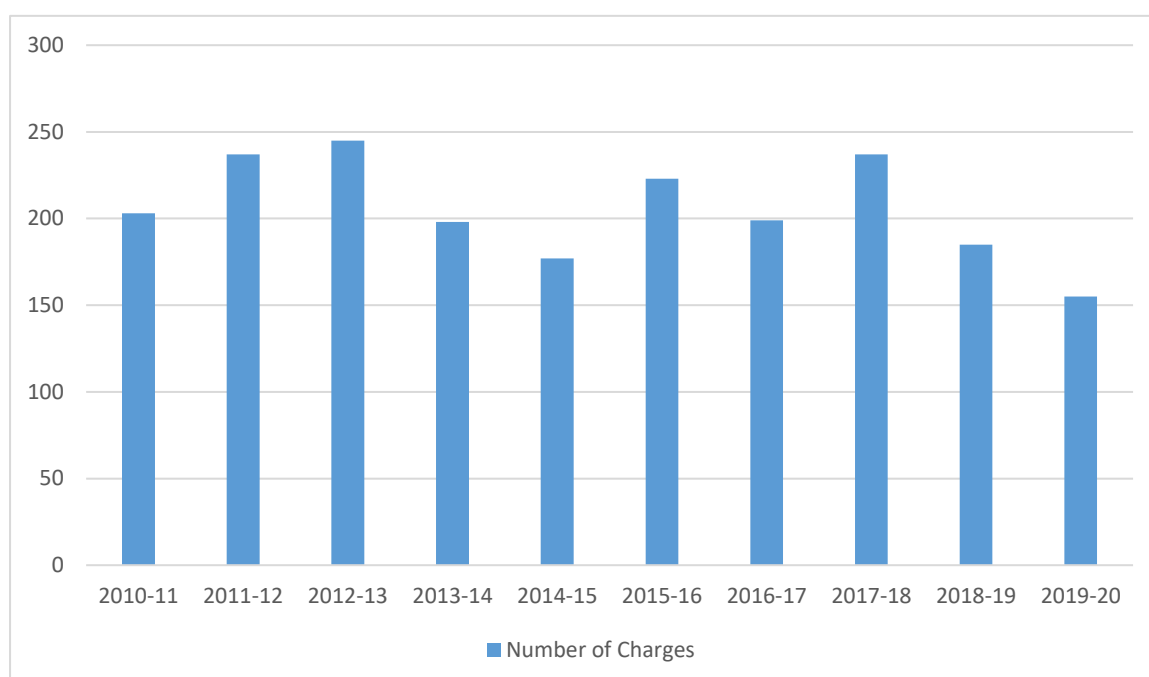
In New Zealand the majority of children and young people are handled outside the formal criminal justice system, however, 18.45 per cent of young people ($n = 1,467$) were considered serious enough to be handled by the court during the 2019 period (Ministry of Justice, 2019b). A high percentage of young people with dealt with in court were Maori People (61%) (Ministry of Justice, 2019b).

Sexual offending in New Zealand, like Australia, is less extensive than other types of offending behaviours. During the 2019-2020 period, 1,200 people were charged with a sexual

offence in New Zealand ($n = 155$ young people), of which 32 per cent ($n = 389$) were Maori (Ministry of Justice, 2020a). Statistics on young people charged with a sex offence in New Zealand are presented for those individuals aged 19 years or younger (see Figure 5). Since the 2010 to 2011 period, young people in New Zealand account for approximately 15-16 per cent of all people charged with a sexual offence. This figure has dropped to 13 per cent during the 2019 and 2020 period (Ministry of Justice, 2020a). Unlike Australia, New Zealand figures do not differentiate between the number of Maori and non-Maori young people who were charged with a sexual offence; therefore, a comparison between Maori and non-Maori young people could not be made.

Figure 5

Sexual Offences by Young People aged 19 Years and Under in NZ



Objective

In response to the growing awareness of young people engaging in sex crimes, most Australian and New Zealand jurisdictions now provide specialised treatment to reduce sexual recidivism among referred youth (Smallbone & Rayment-McHugh, 2013). Several studies

have been conducted, which are presented in this review, evaluating the effectiveness of services in reducing sexual recidivism. These individual studies in Australia and New Zealand examine the magnitude of participants' mean change at a pre-treatment and post-treatment group level to understand treatment effectiveness. However, a systematic examination of the literature focusing on treatment for young sex offenders in Australia and New Zealand has not been conducted. A comprehensive systematic review of the literature provides opportunities to discover generalisations about factors associated with effective programs (Cook, 1993). Systematic reviews further provide useful guidance and are informative for practitioners, researchers, and program developers (Lipsey, 2009). Simply providing lists of names of programs shown to have positive effects will not produce useful information. Effective information comes from the identification of factors that characterise effective treatment programs and the general principles that characterise "what works" to reduce sex offender recidivism (Lipsey, 2009).

The present study utilised a comprehensive search strategy to retrieve literature evaluating sex offender programs for young people in Australia and New Zealand. A rigorous vetting procedure was deployed, with the assistance of an extensive pre-determined inclusion and exclusion criteria, to source the relevant information sources for inclusion in the review. The evaluations included in the review were analysed and numerous variables coded on several themes that were derived from the studies: general study characteristics, treatment characteristics, offender characteristics, methodological characteristics, post-treatment recidivism, and Indigeneity within studies. The results are systematically presented and discussed in comparison to systematic reviews and meta-analyses that have been conducted on treatment for young sex offenders outside Australia and New Zealand.

Government statistics from Australia and New Zealand suggest young people account for a large percentage of sex crimes (Australian Bureau of Statistics, 2020; Ministry of

Justice, 2020a). However, a search revealed that a review of literature on the effectiveness of treatment programs in reducing sexual recidivism for young offenders has not been conducted. Given the amount of harm caused by sexual offences, it is imperative to understand whether treatment for this population is effective. It serves as a starting point to understanding whether evaluations have also included Indigenous populations and, if so, whether treatment is effective for both young Indigenous and non-Indigenous sex offenders. The findings of what is known and what works will benefit the Department of Justice in Western Australia and various Justice Departments throughout Australia and New Zealand. It is anticipated that the findings will also result in a comprehensive list of recommendations to inform rehabilitative approaches to young sex offenders.

Literature Review

Common Characteristics of Youth who Sexually Offend

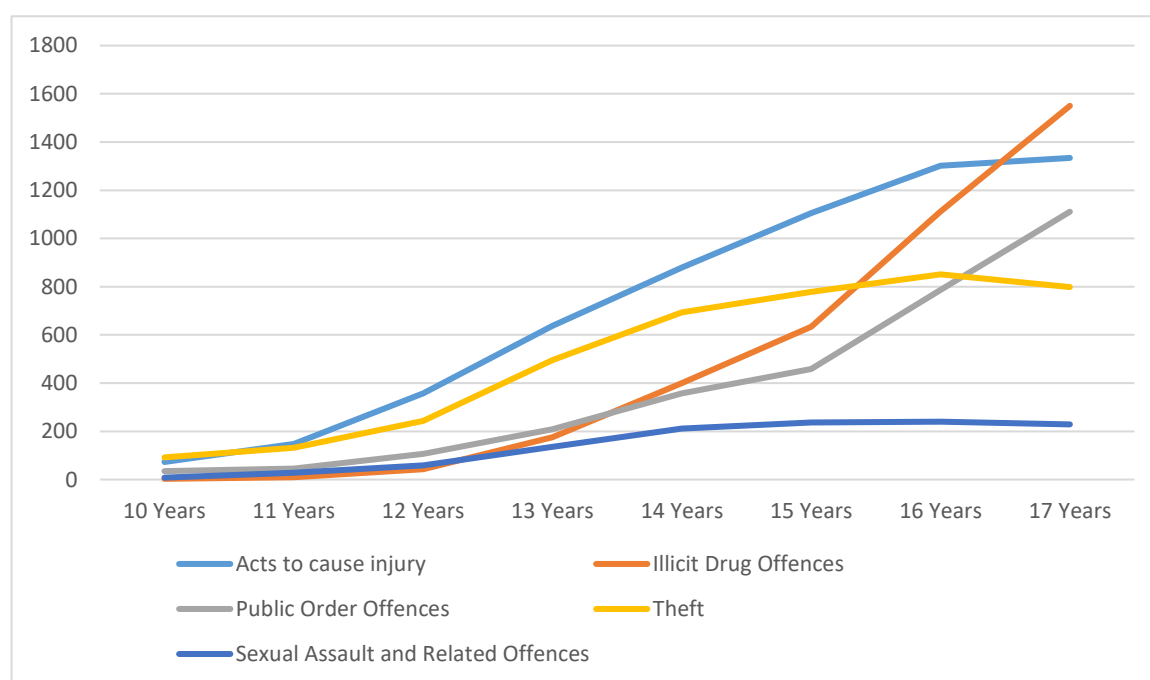
The individual-level characteristics among young sex offenders regarding age, gender, and types of sexual perpetration are published in several studies. Studies generally report a description of young sex offenders or those young people attending treatment for sexual offending; thus, providing a general profile of a young sex offender. The most established characteristic in the criminological literature is the gender of young sex offenders. Being male is the most powerful predictor of being a young sex offender (Finkelhor et al., 2009; Fox, 2017). The dominance of young males attending treatment for sexual offending has been acknowledged in various countries, including the United States (Finkelhor et al., 2009), Australia (Allan et al., 2003; Daly et al., 2013; Laing et al., 2014), New Zealand (Fortune, 2007), Canada (Wormith & Hanson, 1992), United Kingdom (Balfe et al., 2020), Turkey (Buker & Erbay, 2020), and the Netherlands (Höing et al., 2010). Due to the majority of young male sex offenders in sample populations, most authors have excluded young female sex offenders from studies (Allan et al., 2003; Allard et al., 2016; Balfe et al., 2020). The justification for the exclusion of females is due to inadequate sample sizing and limited confidence that their circumstances were sufficiently similar to simply include the females among their male counterparts.

The age of young sex offenders is well documented characteristic. In a review of 59 studies with samples ranging from 21 to 9,257 participants, Caldwell (2016) reported the mean average age of young sex offenders to be 14.96 years ($SD = 0.78$ years). This finding is consistent with literature reporting the average age among young sex offenders' to be between the age of 14 years (Adams et al., 2020; Allan et al., 2003; Bullens et al., 2006; Van Wijk et al., 2005) and 15 years (Bijleveld & Hendriks, 2003; Bischof et al., 1995). A statistically significant difference has been observed when comparing the age of young sex

offenders to the age of young non-sexual offenders, suggesting the sex offender cohort is significantly younger at the time of their index offence (Bischof et al., 1995; Van Wijk et al., 2005). This effect is observed on the age-crime curve, one of the most generally accepted tenets in criminology (Farrington, 1986; Hirschi & Gottfredson, 1983). Longitudinal data measuring age and crime heterogeneously have shown the prevalence of offending to increase until the age of 17 and gradually decrease thereafter (Farrington, 2003a). Figure 6 presents the association between age and crime for various offence types, in comparison to sexual offending, for young people in Western Australia.

Figure 6

Association between Age and Crime in Western Australia



Research on young sex offenders world-wide typically report the dynamic characteristics of the offending prior to treatment and characteristics of the victim. The sexual offending behaviours of young people attending treatment are heterogeneous. These offending behaviours involve ‘hands-on’ (contact) offending (rape – oral, vaginal, and anal; child molestation; object penetration) and hands-off offending (child pornography,

exhibitionism, voyeurism, and sexual harassment) (Alexander, 1999; Allan et al., 2002; Balfe et al., 2020; Becker & Hicks, 2003; Finkelhor et al., 2009; Fortune, 2007; Fox, 2017; Hunter et al., 2003; Långström & Grann, 2000; Lightfoot & Evans, 2000; Lisette't A et al., 2009; Ryan et al., 1996; Waite et al., 2005). It has also been reported that with a growth in young people coming into contact with electronic devices, there is more opportunity for this growth to breed various deviant online behaviours such as online sexual harassment (Choi et al., 2017). Notwithstanding, authors report that young people who victimise prepubescent children are more inclined to sexually offend against family members and relatives (Awad & Saunders, 1991; Chu & Thomas, 2010; Ellerby & MacPherson, 2002; Gunby & Woodhams, 2010; Kemper & Kistner, 2007), and less likely to sexually offend against a stranger. Although, it is stated that most young people do not go on to sexually offend in adulthood (Nisbet et al., 2004; Ryan & Otonichar, 2016). Based on the literature findings, it can generally be stated the profile of a young sex offender is a male, between the age of 15 and 16 years, and offend against a family member or relative.

Risk Factors for Young Sex Offenders

To distinguish between young sex offenders, Seto and Lalumiere (2010) theorised two models: a generalist and a specialist model. The generalist model assumes that young people engage in sexual offending behaviours as a manifestation of a broader pattern of antisocial behaviours. Comparatively, the specialist model adopts the position that young sex offenders are a distinct group, with offending explained by specific factors differentiating from the factors explaining the behaviours of other young general offenders (Seto & Lalumiere, 2010). Seto and Lalumiere (2010) tested the theoretical models using a meta-analysis that identified 59 studies comparing young male sex offenders ($n = 3,855$) with young general offenders ($n = 13,393$) on several theoretically derived variables. These variables included offender age, conduct problems, antisocial tendencies, criminal involvement, family problems, childhood

maltreatment and exposure to violence, illicit substance issues, interpersonal problems, cognitive abilities, sexuality, and psychopathology. It was hypothesised if the generalist model was shown to be most accurate, the two populations should not differentiate on these theoretically derived variables. Thus, when a young person engages in a sexual or general crime the offence is a result of chance, opportunity, and situational factors (Pullman & Seto, 2012; Seto & Lalumiere, 2010). Findings from the study suggest there is consistency between many variables among young sex offenders and young general offenders; including, antisocial attitudes and beliefs, antisocial personality traits, early conduct problems, social problems, intelligence, and general psychopathology. When accounting for general offending risk factors, the sex offender cohort had less extensive criminal histories, fewer delinquent peers, and less substance abuse. Only two variables favoured the specialist model: maltreatment history and psychosexual development. Young sex offenders were more inclined to have been sexually, physically, or emotionally abused than young general offenders. More so, young sex offenders had early exposure to sex or pornography, exposure to sexual violence in the family, and atypical sexual interests (Seto & Lalumiere, 2010). Additional studies investigating the risk factors associated with sexual offending by young people have focused on familial risk factors.

Using a sample of 73 young males with a diverse range of sex offences, Siria et al. (2020) reported on risk factors reflecting the family history of young sex offenders. The sample consisted of young people between 14 and 18 years of age serving a sentence for sexual aggression (58.2%), sexual abuse (36.3%), child pornography (2.2%), exhibitionist, (1.1%), sexual harassment (1.1%) or prostitution or corruption of minors (1.1%). Self-reported information was provided on a range of variables relating to maltreatment, sexual behaviour background, and inadequate sexualisation. Descriptive statistics (frequency and percentage analysis) and one-sample *t*-test were performed to analyse the variables. The

majority of young people reported experiencing childhood maltreatment, of which emotional abuse (84.93%) and neglect (78.08%) were prominent; followed by physical (38.98%) and sexual abuse (21.92%). Results further revealed an elevated presence of the variable “inadequate sexualisation” as one out of five participants were victims of sexual abuse during childhood. Approximately one-quarter of participants were exposed to inappropriate sexual behaviour within the family environment (26.03%), with more than half the total sample beginning pornography consumption before the age of 12 (69.86%). Nonetheless, the majority of participants had received no school-based sexual education prior to the charge (71.23%), which may be a result of frequent disruptive behaviour and school absenteeism (Siria et al., 2020). The generalisability of the findings are restricted due to the limited sample size, and the young people were serving sentences due to the severity of their sexual offending. Thus, findings may not be generalisable to young offenders who received treatment in the community for less extensive sexual offending.

Seto and Lalumiere (2010) also investigated the sexual abuse histories of young sex offenders. The authors calculated a significant, medium to large average effect size, suggesting a frequent history of sexual abuse among young sex offenders. Additionally, two studies included in the meta-analysis compared young non-sexual offenders to young sex offenders and found the latter to have experience more sexual abuse (reference the two studies in the meta-analysis). Studies reporting rates of sexual abuse were also calculated, stating young sex offenders had five times greater odds of being sexual abused than non-sexual young offenders. Young sex offenders were also more prone to exposure of sexual and non-sexual violence in the family (Seto & Lalumiere, 2010). Seven studies within the meta-analysis were extracted to test the notion that sexual abuse history is particularly relevant to sexual offending against children. These studies within Seto and Lalumiere’s (2010) meta-analyses distinguished sex offenders according to the age of their victims. Those participants

victimising children were significantly more likely to have been the victim of sexual abuse compared to participants who sexually offended against peers. A significant difference was not detected between the two groups when examining physical abuse history (Seto & Lalumiere, 2010).

Consistent with this theme, Jespersen et al. (2009) tested the sexually abused-sexual abuser hypothesis which claims a relationship exists between sexual abuse history and sexual offending. The hypothesis asserts that individuals with a history of sexual abuse are more inclined to sexually offend. If the hypothesis is true a disproportionate number of individuals who sexually offend should have a reported history of sexual abuse. The authors identified 17 studies providing rates of sexual and other forms of abuse, involving 1,037 adult sexual offenders and 1,762 adult non-sexual offenders. Greater odds for sex offenders having experienced sexual abuse were reported in 16 of the 17 studies, with seven of the studies reporting a significant difference. A higher prevalence of physical abuse was also reported for sex offenders in seven of the ten studies providing the physical abuse information. However, the studies are common in that their samples are deficient of young Indigenous People.

To address the gaps in knowledge concerning young Indigenous sex offenders in Australia, Adams et al. (2020) outlined the developmental histories, individual factors, family-system factors, and school-system factors of a sample of Indigenous (n = 81) and non-Indigenous (n = 130) adjudicated young males referred to treatment for sexual offending in Queensland. When examining individual risk factors, Indigenous young people were significantly more likely to have antisocial attitudes prior to the initial sexual offence and have a history of substance use when compared to the non-Indigenous sample. The results indicated that the majority of young people had experienced child abuse or neglect prior to their onset sexual offence. Indigenous young people were also significantly more likely to be subject to a child protection notification prior to their onset sexual offence. While less than

half of the sample were exposed to a criminogenic familial environment, the significant majority of young people whose family had criminal involvement were Indigenous. The young Indigenous cohort were also significantly more likely to engage with an antisocial peer group or network, disengage from school, while almost all young Indigenous group resided in a remote community (Adams et al., 2020). Australian research on the risk factors associated with young sex offenders is limited, therefore it is beneficial to consider the findings of studies incorporating young Indigenous sex offenders in research internationally.

Rojas and Gretton (2007) examined the risk factors of male Aboriginal and non-Aboriginal sex offenders between the ages of 12 and 18 in Canada. A total of 359 individuals engaged in the study, with a racial breakdown of 102 Aboriginal participants (28.4%) and 257 non-Aboriginal (71.6%) participants. All participants had confessed to, or been convicted of a sexual offence, and were referred to treatment for their sexual offending behaviours by the court or an assigned probationary officer. Background and offence characteristics were retrospectively coded from file records to determine the risk factors inherent to the population. Young Aboriginal people were significantly more likely than non-Aboriginal youth to present with evidence of Fetal Alcohol Spectrum Disorder (FASD), have a learning disability, have a history of substance abuse, sexual abuse, physical abuse, emotional abuse, and neglect. Furthermore, the Aboriginal young people were significantly more likely to have unstable living conditions. When examining academic functioning, the non-Aboriginal young people had a higher academic achievement score and regular school attendance, while a higher number of Aboriginal young people had school behavioural problems (Rojas & Gretton, 2007).

Similarly to Rojas and Gretton (2007), Ellerby and MacPherson (2002) reported the risk factors associated with Aboriginal people in comparison to non-Aboriginal people in Canada. The sample consisted of 303 sex offenders, constituting 40 per cent Canadian

Aboriginal and 60 per cent non-Aboriginal. When compared to the non-Aboriginal cohort on developmental histories, the Aboriginal offenders were more likely to have extended family as their primary childhood caregiver (17% versus 7%) opposed to a biological parent.

Aboriginal offenders also reported a significantly higher experience of abandonment by, or separation from, parents (69% versus 52%), experienced parental divorce (50% versus 38%), more frequently experience a family member committing suicide (17% versus 6%) and lost a family member by murder (13% versus 3%). Aboriginal offenders were significantly more inclined to report having family members who are involved in criminal behaviour (48% versus 23%), witness familial substance abuse (81% versus 57%), witness physical abuse between parents as a minor (57% versus 42%), and report inappropriate sexual boundaries within the family dynamic growing up (42% versus 28%). When considering experiences of childhood abuse, the Aboriginal group were significantly more likely to report sexual abuse (65% versus 52%) and have a high number of sexual abuse perpetrators. With disregard to Indigeneity, the observation that both young and adult sex offenders are more likely than non-sexual offenders to be victims of sexual abuse as children is a robust finding in the literature. In sum, these studies assist in the understanding of risk factors of young sex offenders that are either Indigenous or non-Indigenous. Understanding the characteristic and risk factor of young sex offenders provides the foundation for understanding the interventions and treatment needs of these offenders.

Sex offender treatment

There has been an increased acknowledgement of the benefits of providing treatment to young sex offenders (Lambie, 2007). Academics worldwide have enhanced knowledge in the criminological field of the most appropriate methods to rehabilitate young sex offenders, by attempting to reduce or cease sexual recidivism (Borduin et al., 1990; Borduin et al., 2009; K. Hanson et al., 2009; Hanson et al., 2002; Looman et al., 2000; Lösel & Schmucker, 2005;

McGrath et al., 2003; McGrath et al., 1998; Reitzel & Carbonell, 2006; Scalora & Garbin, 2003; Schaeffer & Borduin, 2005; Walker et al., 2004). Literature on interventions have favoured the use of specialised treatment, over general treatment methods, to reduce sexual recidivism. Despite the advancement, little is known about the collective efficacy of treatment specifically designed for young sex offenders in Australia and New Zealand, as previous studies have predominately focused on populations from the United States and Canada (Hanson et al., 2002; Lösel & Schmucker, 2005; Reitzel & Carbonell, 2006; Walker et al., 2004). Furthermore, literature on sexual offending has been predominately conducted with adult populations. The comparative body of literature focusing on young people is modest (B Kim et al., 2016). Therefore, the following sections provide literature on the effectiveness of treatment for sex offenders, distinguishing between adults and young people where literature is available. Each section presents a board intervention that has had considerable attention in the literature, including psychological interventions such as multisystemic therapy and cognitive-behavioural therapy. A critical evaluation and identification of methodological limitations are presented throughout.

Multisystemic Therapy

Multisystemic therapy (MST) has been noted as effective for reducing recidivism for sex offenders in both young and adult populations (Borduin et al., 2009; Fanniff & Becker, 2006; Henggeler, 2012; Huey Jr et al., 2000). Multisystemic therapy incorporates both Bronfenbrenner's (1979) Theory of Social Ecology and the empirically validated determinants of antisocial behaviour in youth. A young person's social ecology is the conception of a developing individual, their environment, and the evolving interaction between the two. Bronfenbrenner (1979) explained the idea of an ecological environment as a set of nested structures that are interconnected. The inner level is the developing person in their immediate setting, for example, the young person's home, schooling environment, or

classroom. The varying environments within the developing person's immediate setting are interconnected, thus the need to look beyond a single setting to the relationship between multiple settings. It is hypothesised that a young person's development moves beyond factors influenced by the immediate environment; rather, development is affected by events occurring in the absence of the young person (Bronfenbrenner, 1979). For example, parental employment conditions can affect a young person's development despite the young person's non-presence. Human development is, therefore, a product of the developing young person and their environment with behaviour evolving as a result of the connect between individual and environment (Bronfenbrenner, 1988). The theory of social ecology provides a model enhancing the detection of all of these wide-ranging developmental influences. In conjunction with the young person's social ecology and longitudinal research on empirically validated determinants of anti-social behaviour, MST aims to reduce the anti-social behaviour by addressing risk factors linked to the problematic behaviour (Henggeler, 2012).

Young people who present with serious anti-social behaviours are provided with MST, with the incorporation of family into therapy to assist with improved monitoring, supervision, discipline, and to reduce deviant peer affiliations (Henggeler, 2012; B Kim et al., 2016). The therapy aims to disrupt the sexual assault cycle by targeting a comprehensive set of identified risk factors through both family and individualised intervention. Interventions integrate empirically based clinical techniques, including various behavioural therapies and structural family therapy, to form a broad-based ecological framework. In addition, treatment is community-based and targets individual and family risk factors for both sexual and general offending (Fanniff & Becker, 2006; Henggeler, 2012). Multisystemic therapy's approach for sexual offenders uses similar principles and evidence-based techniques as those for non-sexual offenders; however, focusing on the young offenders ecology that are functionally related to the problem sexual behaviour (Henggeler, 2012) At the family level, the therapy

aims to enhance parenting knowledge by providing support and resources, reduce denial of sexual offending, and promote communication between family members. Family members work with those in the young person's social ecology, such as teachers, to develop plans for risk reduction, victim safety and relapse prevention. At the peer level, problem-solving deficits and social skills are targeted to promote friendship development and age-appropriate sexual experiences. Strategies to monitor the young person's school performance and discourage associations with deviant peers are also developed (Henggeler, 2012). Studies have examined the effects of multisystemic therapy on young people charged or convicted of a sex offence and found a reduction in sexual and non-sexual recidivism post-treatment (Borduin et al., 1990; Borduin et al., 2009; Schaeffer & Borduin, 2005).

Literature exclusively focusing on the effects of MST for young sex offenders is limited in comparison to a larger body of literature on general offending by young people. Borduin et al. (1990) tested MST's ability to reduce sexual and non-sexual recidivism among eight young sex offenders, with a control group of eight young sexual offenders receiving individual therapy. The sample comprised of young people with an approximate age of 14 who had been arrested for a range of sexual offences, including rape, attempted rape, sexual assault, sodomy, and exhibitionism. Participants and their families received treatment weekly in a 2.5-hour group meeting, with each participant receiving on average 37 hours of treatment. Information on post-treatment sexual and general recidivism was collated from juvenile court, adult court, and police records, with the length of follow-up ranging from 21 months to 49 months. Follow-up results suggested multisystemic therapy had long lasting effects in contrast to individual therapy. Participants receiving multisystemic therapy had a recidivism rate of 12.5 per cent for sexual offences and 25 per cent for non-sexual offences. In comparison, those participants receiving individual therapy had a sexual recidivism rate of

75 per cent and 50 per cent for non-sexual recidivism (Borduin et al., 1990). Although, due to the small sample size, generalisability must be made with caution.

To address this limitation, Schaeffer and Borduin (2005) conducted a randomised clinical trial examining the long-term criminal activity of 176 serious young offenders who had received a criminal charge. Similar to the Borduin et al. (1990) study, the sample received either MST or individual therapy and comprised young sexual and non-sexual offenders. Data on recidivism from official arrest and incarceration sources were retrieved, with an average follow-up period of 13.7 years post-treatment. The authors found MST significantly reduced recidivism and the chance of an arrest post-treatment (50 per cent), compared to individual therapy (81 per cent). Further, the multisystemic therapy group were sentenced to 61 per cent fewer days of imprisonment and 37 per cent fewer days of probation as adults than those participants receiving individual therapy (Schaeffer & Borduin, 2005).

While Borduin et al. (1990) and Schaeffer and Borduin (2005) are consistent in their findings supporting the use of MST's to reduce recidivism, there is a limitation in the accuracy of recidivism information in both studies. Data on recidivism was limited to official sources within the criminal justice system, which is limited to official statistics and does not represent the entirety of recidivist behaviour that may occur undetected (Babinski et al., 2001; Loeber & Farrington, 1998). It is understood the number of sexual offences perpetrated far exceeds the number that comes to the attention of the criminal justice system (Weinrott & Saylor, 1991). This may be a result of embarrassment and stigma associated to sex crimes, victim perception they will not be believed or the perceived ineffectiveness of the criminal justice system, or that the offence is not serious enough to warrant reporting (Felson & Paré, 2005). For younger victims there may be an inability to understand what constitutes sexual assault; although, in the schooling context, a culture of 'not snitching' may impact victim reporting (Allnock & Atkinson, 2019). Official data on sexual offending is measured by

formal legal measures such as breaches, re-arrests, or re-convictions, and are not a true representation of the sexual offender population (Babinski et al., 2001). True recidivism measures should incorporate self-reported data because, when obtained anonymously and held confidential from legal authorities, it yields more valid measures than official documentation (Weinrott & Saylor, 1991).

To demonstrate that the inclusion of self-reported data yields more accurate recidivism information, Groth et al. (1982) anonymously surveyed 137 incarcerated sex offenders. The group comprised of rapists who had been officially documented as committing a mean of 2.8 rapes, however they admitted to a mean of 5.2 rapes per individual (Groth et al., 1982). Similar studies have also highlighted a higher number of reported offences when examining self-reported data in comparison to official records. Weinrott and Saylor (1991) utilised computer-administered surveys with 99 sex offenders who were completing a sex offender program. Within that sample, 37 individuals had been arrested for rape, attempted rape, or forcible sodomy of a female adult. Official accounts resulted in 67 offences with a mean number of 1.8 victims, yet there was a self-reported number of 433 rapes, with a mean of 11.7 victims between each offender (Weinrott & Saylor, 1991). Arrest reports cited that, among the 67 men arrested for sexually abusing a child, 136 different victims had been molested; however, these 67 men admitted to more than 8,000 victimisations with 959 different children (Weinrott & Saylor, 1991). Similar studies using consistent methods have also found that self-reported information on sexual offending portrays a more accurate picture of offending compared to official records (Abel et al., 1987; Binik et al., 1989; DeLisi et al., 2016; Freeman-Longo, 1985).

The validity for self-reported information was strong as disclosure of arrests typically corresponded to official arrest records. Notwithstanding this validity, self-report data is a less time-consuming approach to gathering recidivism information (Pham et al., 2020). While this

approach has been met with some scepticism regarding accuracy in relation to self-presentation bias (Robins & John, 1997) and deception (Schretlen & Arkowitz, 1990), there is evidence to suggest accuracy in self-reporting information. A literature review on crime and delinquency suggests that self-reported data on offending is reasonably accurate and valid, and captures the majority of all offending (Thornberry & Krohn, 2000). Furthermore, it was more recently reported that offenders who committed more violent offences only underestimated 10 per cent of crime-related content when self-reporting (Kroner et al., 2007). Despite common assumptions that offender self-reported data may be biased, empirical evidence suggests the data is more accurate than some researchers may assume. Since both self-report and official records each contribute unique information and reflect different sources of error, it is proposed that a combination of both types of records is the most inclusive indicator of criminal activity. An evaluation of multisystemic therapy for young sex offenders by Borduin et al. (2009) used both official records and incorporated self-reporting measures.

Borduin et al. (2009) compared MST to usual community services for young sexual offenders who were deemed to be at a high risk of continuing their sexual offending. Self-reported data using the Self-Report Delinquency Scale was used to measure recidivism for the first three months post-treatment. Official data was additionally used and collected yearly for an average of 8.9 years. The authors used a pre- and post-test control group design comprising 48 participants, with random assignment to conditions. Results demonstrated that multisystemic participants had 83 per cent fewer arrests for sexual crimes and 70 per cent fewer arrests for other crimes when compared to those participants in the usual community services treatment (Borduin et al., 2009). By the end of the follow-up period, 75 per cent of those participants in the community services group had been arrested a minimum of once, compared with 29.9 per cent of the multisystemic group (Borduin et al., 2009). MST was

found to have further favourable effects on family relations, peer relations and academic performance (Borduin et al., 2009).

The low recidivism rates observed in studies using MST on young sexual offenders is potentially due to the emphasis of the therapy's approach to deviant behaviour. That is, multisystemic therapy is highly contextual in its consideration of the important systems in which young people are embedded (Borduin et al., 1990). Systems theorists such as Hoffman and Conway (1981) argue that changes in behaviour are adequately maintained when the individual's systemic context has been altered to support such change. Henggeler and Borduin (1990) propose that young people with serious behavioural problems are effectively treated with interventions that directly address dysfunctional behaviour and relationships within their naturally occurring environment. While the number of studies exploring the effects of multisystemic therapy on reducing sexual recidivism is relatively small, the literature base and results on cognitive-behavioural therapy are more extensive.

Cognitive-Behavioural Therapy

Cognitive-behavioural therapy (CBT) is the foundation for various treatment approaches to reducing sexual recidivism in both young and adult offenders (Brandes & Cheung, 2009; B Kim et al., 2016; McGrath et al., 2009; Moster et al., 2008). Academics evaluating the treatment and management of sex offenders support the use of cognitive-behavioural approaches (Brandes & Cheung, 2009; B Kim et al., 2016; McGrath et al., 2009). CBT asserts that a common symptom among all psychological problems is distorted and dysfunctional thought, and these thoughts influence a person's moods and behaviours (Beck & Beck, 1995). An individual's emotional experiences and behaviours are determined by their thoughts, attitudes and beliefs (Beck & Beck, 1995; B Kim et al., 2016; Moster et al., 2008). CBT is therefore built on the premise that an individual's thoughts and beliefs must be altered to change the way they behave or experience and express emotions. Various processes

are implemented to assist the individual in examining the relationship between thoughts and subsequent emotions and behaviours (Moster et al., 2008). These processes, administered by CBT program implementers, use techniques that include restructuring incorrect cognitions, role-play and behavioural rehearsals (Beck & Beck, 1995). Additionally, skills to argue for or against thoughts and behaviours, such as the identification and evaluation of automatic thoughts, decision-making, identifying emotions, problem-solving, and activity monitoring and scheduling, may be taught to the individual (Moster et al., 2008).

Cognitive-behavioural interventions guided by Andrews & Bonta's (2010) risk, need, and responsivity (RNR) principles are frequently used in the treatment of sex offenders. The risk-need model states the requirement that correctional interventions be structured on these three core rehabilitation principles (Ward et al., 2006). Risk addresses the need for offender treatment to match the individual's risk to community, with higher risk offenders receiving higher intensity treatment interventions (Andrews & Bonta, 2010). The need principle asserts for therapy to be effective there is the requirement that individual criminogenic needs be addressed, and dynamic risk factors require modification. Lastly, responsivity ensures the therapeutic intervention matches an offender's learning style, motivation level, and cultural background (Andrews & Bonta, 2010; Ward et al., 2006). The incorporation of RNR principles and cognitive-behaviour approaches to behavioural change has produced modest effects to reduce post-treatment recidivism in both general and sexual offenders (Andrews & Bonta, 2010; Freeman-Longo & Knopp, 1992; Kirsch & Becker, 2006; Laws, 1989). For sex offender treatment, the primary goal of CBT is to reduce sexual recidivism. An important objective for programs is to focus on instilling a sense of self-worth in the offender, resulting in a prosocial and constructive life post-treatment (Moster et al., 2008). This is achieved through CBT's comprehensive focus on rehabilitating the individual, therefore, protecting the community. Therapy includes the treatment of cognitive distortions, the implementation of

emotion management, teaching social skills and empathy, with the potential incorporation of anger and deviant sexual arousal management (Moster et al., 2008). According to Kim et al. (2016) and Moster et al. (2008), CBT uses a problem focused approach assisting sex offenders to learn new skills and develop competencies in maintaining appropriate behaviours. The effectiveness of cognitive-behavioural approaches in reducing post-treatment sexual recidivism is demonstrated in the preceding studies.

McGrath et al. (1998) examined recidivism data to established CBT's ability to lower re-offending in a sample of 122 adult sex offenders. Of the participants, 71 participants were enrolled in a cognitive-behavioural program for a minimum of three months. The therapy encompassed components, including accepting responsibility, modifying cognitive distortions, developing victim empathy, controlling sexual arousals, improving social competence, and developing relapse-prevention skills. A number of participants (n = 32) received mental health treatment while a non-treatment comparison group was comprised of the remaining participants. During the post-treatment follow-up period, recidivism data was collated for sexual, non-sexual and violent, and non-violent offending, including probation violations. A statistically significant treatment benefit was observed for the recipients of a cognitive-behavioural intervention. These offenders were less inclined than the control group to recidivate sexually, non-sexual but violently, non-violently, or to violate probationary conditions (McGrath et al., 1998). In a similar effort to quantify CBT's effectiveness, Looman et al. (2000) investigated 89 high-risk adult male sex offenders treated with CBT with 89 high-risk un-treated sex offenders. The 89 un-treated cohort was created from an archive of over 3,000 offenders and matched on three dimensions: age at index offence (within one year), date of index offence (within the same year) and prior criminal history (number of convictions plus or minus two). Comparisons were made between the treatment and control group with reference to sex offence category, and coded based on the

participant's sex offence history as either a rapist, paedophile, incest offender, or hebephile. Official police documents regarding offending behaviours post-treatment state the treated cohort to be significantly less likely to re-offend sexually during the 9.9-year follow-up period. The sexual recidivism rate for treatment completers was 23.6 per cent, in comparison to 51.7 per cent for the untreated group (Looman et al., 2000). General recidivism rate was further encompassed into the findings. Like sexual recidivism, the treated group were less likely to recidivate non-sexually (61.8 per cent) when compared to the untreated group (74.2 per cent). The authors did not, however, incorporate information on those offenders who potentially commenced treatment but dropped out before completion. Recidivism information on dropouts can add significant knowledge to the understanding of a treatment modalities ability to retain participants. Furthermore, the control group comprised un-treated sex offender's contrary to sex offenders who refuse treatment. Mann et al. (2013) suggests offenders refusing treatment have different motivations than those where treatment was not an option.

McGrath et al. (2003) delineated between three sexual offender groups to examine the effectiveness of cognitive-behavioural approaches in reducing post-treatment recidivism. Participants were 195 adult males convicted of a serious sexual offence, sentenced to a minimum of four-years imprisonment, and referred to psychological treatment for their sexual offending behaviours. The sample represented a heterogeneous group of sexual offenders, including rapists (30%), non-contact sexual offenders (2%), incest offenders (26%), and child molesters (42%). Comparisons were made between the cohort of offenders who completed treatment ($n = 56$), those who participated in treatment but disengaged (known as "dropouts") ($n = 49$), and a group refusing to engage in treatment ($n = 90$). As participants were not randomly assigned to treatment conditions the authors used two actuarial risk measures, the RRASOR and Static-99, to ensure no between-group difference

on participants' pre-treatment risk for sexual recidivism. The authors obtained post-treatment recidivism information for all new sexual, violent, and other offences over a mean period of six-years. Overall, almost one-quarter of the total cohort engaged in a new sexual offence during the post-treatment follow-up period (23.1%). Results revealed a significant difference between the recidivism rates of the treatment completer sample ($n = 3$, 5.4%) who re-offended less, compared to those participants who dropped out ($n = 15$, 30.6%) or refused ($n = 45$, 30.0%) treatment. Further, participants receiving aftercare treatment and correctional supervision services were found to have lower sexual recidivism rates. Differences were also observed for violent recidivism, with treatment completers less inclined to violently re-offend ($n = 7$, 12.5%), in comparison to dropouts ($n = 8$, 16.3%) and refusers ($n = 28$, 31.1%). Finally, treatment completers engaged in less "other" offending post-treatment ($n = 17$, 30.4%), while almost half of participants in the latter groups received an "other" charge ($n = 17$, 34.7% and $n = 32$, 35.6% respectively) (McGrath et al., 2003). It is important to note a possible implication of the evaluation. Comparative to the treatment refusers, treatment completers had a significantly longer maximum sentence and longer mean time between their minimum and maximum sentence. The sentence structure differences may have influenced participants engagement, with the incentive of reduce time in prison as motivation for completing treatment. For effective behavioural change participants need to be involved and engaged in treatment, and not just complete treatment. Considering the length of the follow-up period, the limitation should not overshadow the success of CBT in reducing sexual recidivism post-treatment.

The benefits of CBT in reducing sexual recidivism is well established in studies evaluating treatment programs (Looman et al., 2000; McGrath et al., 2003; McGrath et al., 1998). A weakness of the evaluation literature, however, is singular studies examining the effects of treatment. Singular study designs are known to encounter issues such as short post-

treatment follow-up periods, small sample sizes, and small effect sizes, which, in statistical terms, render it difficult to detect significant treatment effects (Woodrow & Bright, 2011). A method to counter this limitation is the utilisation of meta-analytic research approaches, which incorporate multiple studies investigating similar hypotheses and phenomena. Meta-analyses use statistical techniques to synthesise data from numerous studies into a single quantitative estimate or summary effect size (Boland et al., 2017; Petticrew & Roberts, 2008; Uman, 2011; Woodrow & Bright, 2011). The effect size measures the strength of the relationship between two variables, providing information on the magnitude of the intervention effect (Uman, 2011). The type of effect size calculated generally depends on the type of outcome and intervention being examined, in addition to the data available from the published evaluations (Uman, 2011). It is recommended for dichotomous data that studies use odds ratios (OR) to calculate an effect size (Fleiss, 1994; Wilson & Lipsey, 2001). An odds ratio represents the ratio of the odds of an event being present in one group to the odds of the same event being present in a comparison group.

Hanson et al. (2002) conducted one of the first major meta-analyses including 43 studies examining a total of 5,078 treated and 4,376 untreated young and adult sex offenders. The studies were obtained from an extensive search of two databases, using various keywords relating to sex offenders and sexual offending. Reference lists from studies included in the review were further examined for additional research, and letters sent to 30 academics for the retrieval of unpublished studies or data. Pre-determined inclusion criteria ensured studies included in the review compared the sexual and general recidivism rates of sex offenders who completed treatment with a comparison group of un-treated sex offenders. The majority of included studies were derived from the United States ($n = 21$) and Canada ($n = 16$), with five studies from the United Kingdom and one from New Zealand. It was common for programs to be administered in an institutional setting ($n = 23$), in the community ($n = 17$) or in both (n

= 3). Furthermore, while the majority of studies incorporated adult sex offenders, four of the 43 identified studies focused exclusively on young sex offenders. The post-treatment follow-up periods ranged from 12 months to 16 years, with a median of 46 months for both the treatment and comparison groups. Results from the analysis showed sexual recidivism to be significantly lower for treated offenders (12.3%) than the comparison group comprising untreated offenders (16.8%). There was a small advantage for those participants that completed treatment compared to those untreated offenders ($OR = 0.81$), which depicted a statistically significant difference. A similar result was obtained for non-sexual offending, as treatment completers were less likely to recidivate non-sexually (27.9%) compared to the non-treatment group (39.2%). Studies comparing treatment completers with treatment dropouts consistently reported dropouts to have higher rates of sexual and non-sexual recidivism. This result was also reported when studies stated no recidivism difference between treatment completers and treatment refusers. While the meta-analysis was not restricted to studies incorporating cognitive-behavioural approaches, CBT programs were considered the most effective treatment modality to reduce sexual and non-sexual recidivism (Hanson et al., 2002).

Walker et al. (2004) used a similar meta-analytic approach to quantify the effectiveness of different treatment methods for reducing sexual recidivism, focusing exclusively on young sex offenders. The authors deviated from the recidivism information used in Hanson et al. (2002) by including self-reported information and level of arousal in response to sexual stimuli as a measurement of recidivism, in addition to official recidivism records. A comprehensive search identified studies in two major databases, with the incorporation of studies included in major reviews of the literature provided by Camp and Thyer (1993) and Morenz and Becker (1995). Internet searches were conducted using the phrase “treatment for adolescent sexual offenders” and electronic mail and phone calls were

directed towards authors with publications in the field. A rigorous vetting of studies using pre-determined inclusion criteria resulted in 10 studies, comprising 644 young sex offenders. To understand the overall effectiveness of treatment a weighted average r was computed ($r = .37$) from the self-reported, official, and level of arousal information, suggesting treatment for male adolescent sex offenders was effective. Encouragingly, studies with the poorest results and least impact on the dependent recidivism variable were considered to be effective. Three of the four studies reporting an effect size higher than .50 were either cognitive-behavioural or multi-systemic therapy. The largest effect sizes were found to be treatment modalities using cognitive-behavioural approaches. Separate meta-analyses were conducted for studies using self-reported information and studies using official records. Larger overall weighted average r 's were obtained for studies using self-reported recidivism data ($r = .48$) compared to official records ($r = .26$) (Walker et al., 2004). The incorporation of self-reported information on post-treatment recidivism resulted in a more accurate account of recidivistic behaviours, as reliance on official records inaccurately represented recidivism rates.

The meta-analysis conducted by Walker et al. (2004) is not without limitations, with half of the studies ($n = 5$) not reporting mortality rates for the treatment group. Mortality rates are the rate of which participants dropped out of treatment before completion. The benefit of reporting mortality rates is in the ability to calculate differences in recidivism between participants who completed treatment and those who dropped out; thus, demonstrating ability of the treatment modality to retain participants. Moreover, eight studies did not include a control group, presenting difficulties reporting the efficiency of treatment. There is a requirement for research to show the treatment under review has an effect beyond what could be explained by confounding variables such as cohort effects or other interventions (Henggeler et al., 1994).

These limitations were addressed in a meta-analysis by Winokur et al. (2006). The project addressed the effectiveness of sex offender treatment for young people in the community ($n = 3$), residential facilities ($n = 3$) and a correctional setting. Consistent with Hanson et al. (2002) and Walker et al. (2004), the meta-analysis underwent a rigorous vetting process which resulted in the identification of 11 studies. Only one identified study used random assignment, with the remaining studies matched un-treated participants to those in the treatment cohort on relevant demographic and offence history factors. Over an average follow-up period of six years, the results depicted a small to moderate positive effect of treatment for young sex offenders in reducing sexual and non-sexual recidivism. When focusing on sexual recidivism specifically, the analysis produced a combined effect size of .252; thus, a statistically significant, small positive effect for young treatment completers. The treatment cohort had a sexual recidivism rate of 0% to 5%, with higher rates of sexual recidivism observed for un-treated young people (5% to 18%). Similar findings were obtained for non-sexual recidivistic behaviours, with treated offenders less inclined (10% to 36%) to reoffend non-sexually than un-treated offenders (10% to 75%). Young people who completed a cognitive-behavioural intervention were also less inclined to recidivate sexually or non-sexually than those who did not receive treatment, those who received an alternative treatment, or those who received some treatment but dropped out (Winokur et al., 2006).

While CBT is cited in the literature as an effective method of treatment for reducing sexual recidivism and in some instances non-sexual recidivism among adults (Brandes & Cheung, 2009; Grant et al., 2009; B Kim et al., 2016; Looman et al., 2000; McGrath et al., 2003; McGrath et al., 2009; McGrath et al., 1998; Moster et al., 2008; Scalora & Garbin, 2003) and young people (Hanson et al., 2002; Walker et al., 2004; Winokur et al., 2006), one meta-analytic review contradicts these findings.

Reitzel and Carbonell's (2006) meta-analysis on treatment interventions for young sex offenders did not find CBT to be the most effective modality. The authors identified nine published and unpublished studies reporting the effectiveness of treatment for young sex offenders, with a total combined sample size of 2,986 participants ($n = 2604$ known to be male). A statistically significant effect favouring the use of treatment to reduce sexual recidivism was obtained with an average weighted effect size of 0.43. Over an average follow-up period of 58.5 months, 7.37% of treatment completers recidivated sexually in contrast to 18.93% in the control group. Unlike other meta-analyses (Hanson et al., 2002; Lösel & Schmucker, 2005; Schmucker & Lösel, 2017; Walker et al., 2004; Winokur et al., 2006), a lack of superiority was found for cognitive-behavioural approaches; rather, favouring the use of multisystemic therapy. This may be a consequence of literature categorising multisystemic therapy into CBT classifications, as multisystemic therapy can contain cognitive-behavioural components. Research has shown that multisystemic therapy can produce larger effect sizes (Gallagher et al., 1999). In Reitzel and Carbonell's (2006) meta-analysis multisystemic therapy was provided its own discrete category and therefore produced contradictory results. Notwithstanding this finding, cognitive-behavioural approaches continue to be cited in the criminological literature as the most effective treatment modality for sex offenders (Brandes & Cheung, 2009; Hanson et al., 2002; B Kim et al., 2016; Lösel & Schmucker, 2005; McGrath et al., 2009; Moster et al., 2008; Schmucker & Lösel, 2017; Walker et al., 2004; Winokur et al., 2006).

A meta-analysis of 106 studies measuring recidivism rates among 33,783 young sex offenders charged with a sexual offence, between 1938 and 2015, found higher recidivism rates for general offending in comparison to sexual offending (Caldwell, 2016). The meta-analysis had a follow-up period of 62.02 months and showed a weighted mean base rate for detected sexual recidivism of 4.92 per cent. The rate of recidivism for general offending was

higher than sexual, with a mean average of 41.24 per cent across all studies. Moreover, a weighted mean average of 2.75 per cent was calculated when focusing on studies conducted between 2000 and 2015; 73 per cent lower than the of 10.30 per cent reported by studies conducted between 1980 and 1995 (Caldwell, 2016). An explanation for the decline in young sex offenders may be due to older studies conducted before 1980 had many participants presenting homosexual, consensual fornication, promiscuity, and transvestite behaviours. It is anticipated that reduced recidivism is a result of the substantial improvement in efficacy of treatment for young sex offender, an increase in the availability of treatment in recent years, and the establishment or promotion of standards for effective programming (Caldwell, 2016).

Helmus et al. (2012) found that adult sex offenders were more likely to sexually recidivate than young sex offenders. The authors used a meta-analysis to identify 23 studies including 8,106 adult male sex offenders. Results from the meta-analysis suggest over a five-year follow-up period adult sex offenders had an 11.1 per cent recidivism rate (Helmus et al., 2012). The findings from Caldwell (2016) and Helmus et al. (2012) indicate young sex offenders exhibit a lower sexual recidivism rate than adult sex offenders, and young sex offenders are a greater risk of recidivating generally than sexually. However, a misconception that young sex offenders are at a greater risk of recidivating sexually continues (Kettrey & Lipsey, 2018). The belief that young people who have engaged in a sexual offence are at risk of persisting into adulthood has resulted in a proliferation of specialised treatment programs. Nonetheless, even the most recent literature on young sex offenders, building off limitations from previous meta-analyses, continue to produce results suggesting young sex offenders who complete treatment are less inclined to sexually recidivate.

In a recent meta-analysis, Kettrey and Lipsey (2018) investigated the effectiveness of young sex offender treatments by measuring recidivism. Contrary to previous research, the authors limited their inclusion of studies to those they classified as methodologically strong;

that is, studies using random assignment of participants into conditions. It was also compulsory that participants were matched on one or more risk factors for recidivism, or the study reported on base rate measures of group differences on risk factors. Eight studies were identified in twelve reports, half of the studies were conducted in the United States ($n = 4$), Canada ($n = 2$) and Australia ($n = 2$). Only one study was classified as a complete randomised control trial (RCT) (Borduin et al., 1990), while the remainder were matched on a set of background characteristics including risk factors for recidivism ($n = 2$) or reported a base rate measure of recidivism that was equivalent between the groups ($n = 5$). Sexual recidivism rates from the studies ranged from 0 to 12.7 per cent for treated offenders and 3.7 to 75 per cent for the comparison groups. Odds ratio effect sizes further ranged from 0.05 to 1.27, with four studies having effect sizes that favoured treatment. Six of the studies additionally reported general recidivism, which was higher than sexual recidivism, ranging from 18.9 to 53.8 per cent for the treatment group and 16.5 to 75 per cent in the comparison groups. Effect sizes further ranged from 0.39 to 1.58, and favoured the treatment group in five of the six studies (Kettrey & Lipsey, 2018). The literature findings support the use of cognitive-behavioural therapy for the treatment of sexual offending by young people, however it is important to ensure the treatment is suitable for Indigenous populations.

Treatment for Indigenous Sex Offenders

The effectiveness of culturally relevant programming for offenders is an important topic, particularly in Australia and New Zealand where the justice systems are overrepresented by Indigenous People (Anthony & Blagg, 2020; McIntosh & Workman, 2017; Quigley, 2020; Shepherd & Ilallo, 2016; Staines & Scott, 2020; Stanley & Mihaere, 2018; Tubex et al., 2020; Webb, 2017). A considerable amount of work has been conducted addressing the treatment needs of sex offenders generally, but little is known about what works for Indigenous populations specifically. Treatment for sex offenders is predominately

based on contemporary Western methods, however, for treatment to be effective for Indigenous offenders, generic services should be replaced with culturally relevant programs (Gutierrez et al., 2018). Cognitive-behavioural therapy is one of the most common therapeutic treatments of both young and adult sex offenders (Brandes & Cheung, 2009; Grant et al., 2009; B Kim et al., 2016; McGrath et al., 2009; Moster et al., 2008; Robson, 1998; Usher & Stewart, 2014), with its ability to reduce sexual recidivism post-treatment recognised in a number of meta-analyses (Hanson et al., 2002; Lösel & Schmucker, 2005; Schmucker & Lösel, 2017; Walker et al., 2004; Winokur et al., 2006). However, programs based on cognitive-behavioural approaches have different outcomes for Indigenous and non-Indigenous offenders (Macgregor, 2008). Therefore, culturally sensitive treatment encompassing cultural components specific to the population they are intended to treat are crucial to program effectiveness, particularly when the young person has strong cultural ties (Pooley, 2020).

Allan et al. (2003) conducted a retrospective evaluation of generic treatment for young sex offenders. The Western Australian (WA) Court and Police files of 326 young sex offenders (n = 95 Indigenous) convicted between 1990 and 1998 in WA were evaluated. The post-treatment follow-up period lasted 4.2 years, with recidivism during this period defined as a reconviction in any youth or adult court in WA. Information of the type of treatment received was limited, rather, the authors noted that young people attended a psychological service (n = 97), of which 12 were referred to another agency and 12 were not treated, the remaining 73 were treated by the service. The remaining 213 participants had no contact with the psychological service as either the court did not mandate, or the young people were convicted between 1990 and 1992 before the services were established. The authors do not disclose information on the 13 unaccounted participants. Young Indigenous offenders were reportedly three times more likely to recidivate sexually post-treatment than non-Indigenous

($n = 15$, 15.8% and $n = 6$, 5.0% respectively). Indigenous offenders had a lengthier follow-up period when compared to non-Indigenous (4.2 and 3.2 years respectively). A consequence of time difference is the Indigenous cohort had a longer time to recidivate post-treatment. Research on the effectiveness of treatment for Indigenous sex offenders in Australia is limited; therefore, Australian policy makers and practitioners consult international studies for information (Adams et al., 2020). It is of importance to understand culturally relevant programming's efficiency for the population is it intended to treat. However, questions have been raised regarding the applicability of international advancements to the unique geographical and cultural features of Australia's youth offender population (Smallbone & Rayment-McHugh, 2013).

Internationally, a meta-analysis calculating the impact of treatment for Indigenous general offenders showed positive findings favouring participation CBT or treatment substantially similar to the principles and interventions used in CBT. Usher and Stewart (2014) examined eight reports comprising 5,755 offenders who self-identified as Inuit, Innu, North American Indian, or Métis. The average weighted mean effect size calculated was 1.45, 99% CI = [1.27, 1.63]. Aboriginal offenders who participated in a treatment program had their odds of reoffending reduced by one and a half times than Aboriginal offenders who did not participate in a program (Usher & Stewart, 2014). While the meta-analysis provides a source of evidence favouring treatment for Aboriginal general offenders, when compared to no treatment, the review did not provide evidence on Aboriginal sex offenders.

Trevethan et al. (2004) examined the effects of culturally appropriate treatment during a cognitive-behavioural, multi-model, high-intensity program designed for Inuit offenders in Canada with a history of sexual violence. A small sample of Inuit offenders participated in the pilot study ($n = 24$), which involved a review case files and interviews with participants. The cultural-relevance and linguistic-sensitivity of the program maintained a high retention

rate (93%). This is important as it has been acknowledged that high rates of Inuit offenders do not complete treatment programs (Hamilton, 2002; Trevethan et al., 2004). Treatment was made culturally relevant through co-facilitation in Inuktitut and “Inuit healing”, a therapy process led and supervised by experienced and skilled Inuit healers in Inuktitut. Inuit cultural values are incorporated into the treatment program and individual support counselling was conducted by Inuit staff. Positive changes in the attitudes of participants were also seen in interviews with the sample who completed treatment. Participants were also satisfied with the role of Inuit healers in the program (91%) indicating the link with culture and community had a positive impact on their rehabilitation process (Trevethan et al., 2004). The major limitation of the evaluation was the lack of information sought on recidivism post-treatment. As a result, there is a lack of confidence in concluding that the treatment had a positive effect on reducing sexual recidivism.

Addressing this limitation, Ellerby and MacPherson (2002) tested the effects of cultural incorporation in sex offender treatment for a sample of Aboriginal People (including North American Indian, Métis and Inuit) attending treatment in Canada. The cases of 303 sex offenders attending a Forensic Behavioural Management Clinic (40% Aboriginal, 60% non-Aboriginal) were analysed. The clinicians blend traditional healing and contemporary treatment (cognitive-behavioural therapy) for Aboriginal sex offenders. This blended approach was facilitated by spiritual healers, for example, Elders, pipe-carriers, and Aboriginal therapists; incorporating traditional teachings, ceremonies, and processes. Aboriginal offenders had the choice of participating in one of two programs: a blended cultural/contemporary program or a cognitive-behavioural, relapse prevention program. Despite the type of treatment received, and although not statistically significant, Aboriginal offenders were less inclined to complete treatment (59.5% versus 74.9%), and more inclined to drop-out out of treatment (12.4% versus 5.5%) or suspend treatment (14.0% versus 4.4%)

when compared to non-Aboriginal participants. However, retention in treatment was maximised when Aboriginal offenders participated in the blended treatment. Comparing Aboriginal participants in non-Aboriginal specific treatment to Aboriginal-specific treatment, the latter were more inclined to complete treatment (83.3% versus 55.2%), and less inclined to terminate treatment (0.0% versus 8.0%), dropout of treatment (0.0% versus 16.1%), or suspend treatment (12.5% versus 16.1%). Aboriginal men were less inclined to voluntarily continue treatment after their warrant had expired compared to non-Aboriginal men (42.0% versus 59.7%). Aboriginal men participating in the Aboriginal-specific program had a higher possibility of maintaining their involvement in treatment after the legal mandate to participate had expired, compared to Aboriginal men participating in the non-blended treatment stream (59% versus 39%). Finally, the post-treatment sexual recidivism rates of the blended cohort were less (8.1%) than that of the comparison group (25.5%) who were matched on five variables (age of first conviction, date of index offence, age at index offence, number of convictions before index offence, and number of sexual offences prior to index offence) (Ellerby & MacPherson, 2002). Thus, the Aboriginal specific blended treatment program demonstrated a substantial ability to retain Aboriginal men in sex offender treatment.

More recently meta-analytic techniques have been implemented to examine the efficiency of culturally relevant treatment for Indigenous offenders leading to more successful offender outcomes (reduced recidivism) compared to conventional methods. Successful offender outcomes were measured by a reduction in new charges or convictions during the post-treatment follow-up period. The search strategy identified seven studies from New Zealand ($n = 4$) and Canada ($n = 3$) encompassing 1,731 adult Indigenous offenders. The participants received either culturally relevant treatment ($n = 728$) or conventional treatment ($n = 1,003$). Conventional treatments were a range of interventions that were not intentionally culturally informed. Offenders who participated in a culturally relevant

treatment program had significantly lower odds of sexually recidivating post-treatment (OR = 0.72) compared to those in conventional treatment. More specifically, the weighted average recidivism rate was 9% lower for participants in a culturally relevant program than the comparison group (39.1% versus 48.4%). (Gutierrez et al., 2018). The treatment effect may have been influenced as a result of methodological issues present within the individual studies included in the meta-analysis. An issue inherent to meta-analyses is the inclusion of research varying in methodological quality (Oremus et al., 2012; Uman, 2011). The authors assessed the quality of studies using a modified version of the Collaborative Data Outcome Committee (CODC) guidelines, with all studies excluding one evaluation obtaining a weak rating on account of major methodological issues. These issues included: inadequate group matching procedures; the use of program graduates only to examine treatment effectiveness; and limited information on treatment dosage, structure, and modality for both groups (Gutierrez et al., 2018). This limited and missing information prohibits the ability to determine whether the treatment effects were a direct result of the programs cultural relevance or because these culturally relevant programs were of better quality than the program to which the comparison group participants were exposed. In sum, it is crucial for programs implementers to ensure the program is suited to the population it is designed for. Therefore, programs for Indigenous sex offender should also be designed in an appropriate way.

In summary, cognitive-behavioural and multisystemic therapies are reported in the literature to be effective in reducing sexual recidivism among young sex offenders. There is, however, a lack of information on the effects of treatment for young sex offenders collectively focusing on Australia and New Zealand. The present study examined the most reported treatment types in evaluated programs focusing on young sex offenders in Australia and New Zealand; and further investigated the reported success of treatment. To achieve this,

a systematic review of the literature was conducted as it was considered the most suitable approach. The review was originally built from the methodological components of Koehler's et al (2013) systematic review and meta-analysis on the effects of young offender treatment programs in Europe, but tailored to studies exploring the efficiency of treatment specifically designed for sex offenders (Hanson et al., 2002; Reitzel & Carbonell, 2006; Walker et al., 2004).

Research Aims and Questions

Research Aim

The aim of the present study was to identify evaluations of treatment programs for sex offenders between the ages of 10 and 18 years in Australia and New Zealand, and to examine the collective success of programs, where success is measured by reduced sexual and/or general recidivism.

Research Questions

Three research questions guided this project:

1. What treatments are most evaluated in Australia and New Zealand for young sex offenders?
2. What are the recidivism rates following treatment for young sex offenders?
3. What is the quality of evaluation research regarding young sex offender treatment programs in Australia and New Zealand?

Methodology

Design

Systematic reviews are used to organise and understand large quantities of literature by adhering to a specific set of scientific methods that aim to limit bias (Boland et al., 2017; Petticrew & Roberts, 2008; Punch, 2013); therefore, answering the research questions regarding the efficacy of treatment for reducing sexual recidivism. More specifically, a review is used to map areas of uncertainty and identify where little or no relevant research has been conducted, and where new studies and contributions are required (Petticrew & Roberts, 2008). The review process was achieved by comprising a detailed and comprehensive plan and search strategy to initiate the process of identifying, selecting, and critically appraising the relevant research (PRISMA, 2018; Uman, 2011). The methodology used in a systematic review endeavours to limit bias by identifying, including, appraising, critically analysing and synthesising all relevant studies on a particular topic (Boland et al., 2017; Gough et al., 2012; Petticrew & Roberts, 2008; Punch, 2013; Uman, 2011). A scientific summary of the evidence in a specific area is then produced with limited bias, and answers a set of questions established before commencing the review; collectively summarising all there is to know from those studies (Petticrew & Roberts, 2008).

Systematic reviews summarising the outcomes of various treatment evaluations are deemed an efficient method for understanding what works and what does not (Boland et al., 2017; Uman, 2011). The influence of systematic reviews has grown rapidly as potential users have become aware of the methodology's ability to deal with large quantities of research, by allowing the research information to be distilled into a manageable form (Petticrew & Roberts, 2008). A further attraction to researchers is the ability allow decisions on the transparent and potentially defensible basis, as it draws on relevant scientifically sound research, rather than information reported in single studies (Boland et al., 2017; Petticrew &

Roberts, 2008). This appeals to the current policy interests in questions about “what works”, and in evidence-based policymaking more generally (Petticrew & Roberts, 2008). The approach is therefore favoured to singular studies which do not have high levels of methodological soundness and generalisability that represent a good approximate of the ‘truth’ that the study’s findings should be accepted outright (Petticrew & Roberts, 2008). Therefore, most research is best understood by collating results of various studies testing a similar hypothesis within a similar population (Boland et al., 2017; Petticrew & Roberts, 2008). As a result of conducting a systematic review of the literature, the results and implications of otherwise unmanageable quantities of research can be communicated to policymakers (Punch, 2013). Evidence-based decision making is of increasing interest to policymakers as systematic reviews provide a robust summary of the most reliable evidence (Petticrew & Roberts, 2008).

Inclusion and Exclusion Criteria

Population

Potential evaluations included in the review are restricted exclusively to young people between the age of 10 and 18 years, who have been charged with, or convicted of, a sexual offence. Although the World Health Organisation (WHO) defines a young person up to the age of 24 (World Health Organisation, n.d.), the minimum age of 10 has been selected to reflect the minimum age of criminal responsibility in Australia and New Zealand (Crimes Act 1914 (Cth) ss 4M, 4N; Criminal Code Act 1995 (Cth) ss 7.1, 7.2; Criminal Code 2002 (ACT) ss 25, 26; Children (Criminal Proceedings) Act 1987 (NSW) s 5; Criminal Code Act 1983 (NT) ss 38(1)–(2); Criminal Code Act 1899 (Qld) ss 29(1)–(2); Young Offenders Act 1993 (SA) s 5; Criminal Code Act 1924 (Tas) ss 18(1)–(2); Children, Youth and Families Act 2005 (Vic) s 344; Criminal Code Act Compilation Act 1913 (WA) s 29; Children, Young Persons, and Their Families Act 1989 section 272, 1, a; New Zealand Bill of Rights Act 1990).

Moreover, despite government statistics in Australia and New Zealand indicating a higher rate of male sexual offenders (“Australian Bureau of Statistics,” 2019; “Ministry of Justice,” 2019), female samples have been included in the review as females are largely neglected in evaluations of treatment for young sex offenders. Studies were included if participants were from community settings, a juvenile detention facility, or any youth residential styled facility. Finally, participant populations were further inclusive of Indigenous and non-Indigenous young sexual offenders.

Types of Studies

Studies were eligible for inclusion in the review if quantitative data was collected in a randomised control trial (RCT), experimental, or quasi-experimental format. Also, due to the paucity of well-controlled correctional intervention studies, it was necessary to include non-randomised control groups (Koehler et al., 2013). Studies could be inclusive of a control group, comparison group, or non-comparative group. While it is beneficial for the control or comparison group within non-experimental studies to show a clear indication of equivalence to the treatment group; this feature was relaxed to include more studies. Thus, it was not necessary for studies to use matching procedures, randomisation, or statistical comparisons of equivalence. Finally, as it is unethical to purposefully withhold treatment from young sex offenders for the benefit of research, control or comparison groups encompassed young people who purposely refused treatment or those who, for various reasons, engaged with treatment but later dropped out.

To ensure quality assurance, studies comparing the effectiveness of the treatment to national statistics on general juvenile offending were excluded from the review, due to an inadequate correlation between comparison groups. Outcomes presented within studies must have included recidivism rates with an average post-treatment follow-up period of six months and, at a minimum, information relating to new offences. Recidivism information was not

exclusive to sexual offending, rather inclusive of offending that may be categorised as violent or serious, or other types of non-violent and non-sexual general offending. Nicholaichuk et al. (2000), emphasised the need for sex offender treatment to also address non-sexual violence and general crime. Therefore, as the goal of correctional programs is to reduce all crime, programs addressing sexual offending focused on other types of offending, not just sexual crime (Nicholaichuk et al., 2000). Studies were further included when recidivism was measured as a result of formal legal measures: probationary breach, parole breach, re-arrest, or re-conviction; or self-reported data pertaining to undetected criminal involvement. Similar recidivism criteria must have been used for both the treatment and control or comparison group. It is also a requirement that recidivism rates were reported for approximately the same follow-up period length. Only offences defined in legislation were included, while non-chargeable anti-social behaviour were excluded.

Retrieval of Studies

Potential studies for inclusion in the review were sought from a range of databases within bibliographic databases and various unpublished information sources. Table 4 provides an overview of the bibliographic databases, commonly known as the “host” database, that were searched, and the specific journals within each host database. Five pre-determined host databases were explored for the review with the goal of identifying multiple information sources: Cochrane Library, ProQuest, Informit, EBSCO, and SAGE. The host databases and specific journals within the host were selected at the recommendation of the Edith Cowan University Information Specialist during the systematic review training session and before commencing the review. The databases were selected due to their relevance on factors such as the location of the articles required and the subject under review.

Table 4

Published Information Sources

Host Database	Journals
Cochrane Library	Cochrane
ProQuest	Australia and New Zealand Criminal Justice Database Psychology Database
Informit	AGIS Plus Text CINCH Australian Criminology Database CINCH-ATSIS Indigenous Australia Indigenous Collection
EBSOC	Criminal Justice Abstracts PsychInfo Net APA PsychArticles APA PsychBooks
SAGE	Australia and New Zealand Journal of Criminology Crime and Delinquency Criminal Justice Criminal Justice and Behaviour Criminal Justice Policy Review Criminal Justice Review Criminology and Criminal Justice International Criminal Justice Review International Journal of Offender Therapy and Comparative Criminology Journal of Contemporary Criminal Justice Journal of Research in Crime and Delinquency

While it was assumed that the majority of studies utilised would be published, it was necessary to allow for the inclusion of un-published studies; the latter commonly known as ‘grey’ or ‘fugitive’ literature (Boland et al., 2017). Introducing grey literature to the review

assists to reduce location bias as studies can be published in journals that are not indexed in bibliographic databases. Therefore, there is the potential that the search strategy would not identify these information sources (Boland et al., 2017). Additional sources of grey literature, such as un-published dissertations, reports, books, and conference abstracts were sought (noted in Table 5). It has been suggested that only including published studies inflates results and higher effect sizes more often than un-published studies, which Rosenthal (1979) depicted as the ‘file draw problem’.

Table 5

Unpublished Information Sources

Unpublished Information Type	Source
Unpublished Resource Database	Dissertations and Theses International Psychology Database
Governmental Databases	Australian Institute of Criminology Ministry of Justice New Zealand Department of Corrections
Books	Edith Cowan University Library
Conference Abstracts	Australia Institute of Criminology Ministry of Justice New Zealand
Google Search Engine	Google Scholar
References	Reference Lists of Included Studies

Literature Search Strategy

Pre-Search

Before commencing the literature search, the Cochrane Library and The International Prospective Register of Systematic Reviews (more commonly known as PROSPERO) were searched to determine whether a similar systematic review had been published, which was negative. Secondly, a scoping search was conducted. Scoping preliminary literature searches are less comprehensive than the main search. The scoping search was performed to determine whether the topic area is suitable for a review by the provision of an overview of the volume and type of evidence available for synthesis (Boland et al., 2017). Major keywords, such as “juvenile”, “young”, “sex”, “offender”, “rehabilitation”, “program”, “recidivism”, were used during the scoping search to identify articles relevant to the review questions. The scoping search produced (n = 208) results that had the potential to be included in the review; although it was hypothesised that only a small number of articles would be discovered. As noted by B Kim et al. (2016), numerous studies have examined the effects of specialised treatment on the recidivism of adult sex offenders, however, the comparable body of research on young sex offenders is modest.

Literature Search

Literature collection was conducted during February 2020 and involved searching the five pre-determined databases, hand searching selected journals and search engines, and manual searching of reference lists of included evaluations (refer to Table 4 and 5). A pre-established list of keywords was developed to accumulate numerous information sources to establish an extensive databank for the retrieval of relevant information. Three methods were used to assist in developing the keywords for the retrieval of information: keywords from similar studies, a scoping search of relevant articles for the review, and the implementation of the PICO method (see Table 6).

Table 6

Keywords Used to Search Electronic Databases

Population	Youth OR Young OR (Young AND Adult) OR Delinquen* OR Juvenile* OR Adolescen* OR Male* OR Female* OR Boy* OR Girl* OR Child* Offend* OR Sex* OR Indigenous OR Aboriginal
Intervention	Progam* OR Treatment* OR Interven* OR Correcti* OR Therap* OR Counsel OR Counse?ing OR Mentor* OR Rehabilitation* OR Cogniti* OR Relapse OR Intensive OR Incarcerat* OR Court* OR Probation* OR Parole OR Mandated OR Inmate* OR Institution* OR Non-Institution* OR Prison* OR Communit* OR Detention
Comparison	(Treatment AND Refus*) OR (Treatment AND Dropout*) OR Waitlist
Outcome	Effect OR Outcome OR Eval* OR Experiment* OR RCT* OR Randomi?ed Control Trial OR Quasi* OR Trial* OR Empirical* OR Recidiv* OR Reoffen* OR Reconvic* OR Behav*

Numerous keywords were retrieved from two similar systematic reviews examining the effects of treatment for young offenders (Evans-Chase & Zhou, 2014; Koehler et al., 2013) to form the foundation of the search strategy. The two studies provided the keyword search the authors used to uncover various sources of data and was located in the appendix section of the relevant articles. Keywords from the studies were included based on the keyword's relevance to the present study, with the irrelevant keywords excluded. Secondly, pre-established keywords from relevant studies that have evaluated the effects of a programmatic intervention on young people, and more specifically, young sex offenders, identified during the scoping search were used in the search strategy. The keyword section

appeared within a publication and its purpose is to highlight the most important and relevant topics or subjects being discussed (Boland et al., 2017). Several keywords relevant to the present study were extracted and included in the pre-established keyword list for the systematic review. Finally, the PICO method was used to categorise the keywords, ensuring the correct keywords would be included in the final search strategy (refer to Table 6).

The PICO method is a popular search tool, focusing on the Population, Intervention, Comparison, and Outcomes, and is endorsed by the Cochrane Collaboration (Methley et al., 2014) Higgins & Green, 2013). Research examining the efficiency of the PICO method has demonstrated its effectiveness through greater sensitivity as opposed to specificity, in comparison to alternative methods, (Methley et al., 2014). The keywords were organised into the PICO framework and discussed with the Edith Cowan University Information Specialist, who ensured the keywords, after some minor changes (including the term “Young Adults”), would target information sources of interest.

A standard search strategy was utilised to maintain consistency among each search process and therefore limiting bias based on the individual database (see Appendix 1). Prior to commencing the literature search, the specifications for advance searching of each database were sought and the instructions of specific searching were read in full. Minor changes were made to the search strategy reflecting the specifications provided by each database, ensuring each database was searched adequately and information sources were not missed. For example, these changes would see Astricts Wildcards (*) that are used to permit multiple words and various spelling discrepancies depending on whether the words were Australian-English or American-English changed to Truncation Wildcards (#), which performed the same function. A number of expanders were also applied within the advance search option to ensure sensitivity remained higher than specificity and, therefore, generating a greater number of potential information sources for inclusion in the review.

Where applicable, the application of equivalent words within the advance search option was included, ensuring the keywords in the search strategy would automatically generate words the database predicted to be of similar value to the search. The application of equivalent subjects was also used to automatically generate articles relating to sexual offending by young people. Similarly, the all-fields full-text search option of articles was selected to ensure that keywords were not restricted to abstracts, rather, keywords were searched throughout the articles in its entirety to enhance the sensitivity of the search. Finally, the subject headings option, which is used to index the content the content of bibliographic databases, was not incorporated in the literature search strategy. As not database provided a list of subject headings it was thought reasonable to exclude this option as bias may be introduced into the search due to inconsistencies between databases. The use of limiters was incorporated to search the psychological databases. Limiters are implemented when there is a need to enhance the specificity of the search as large volumes of irrelevant information sources being identified. That is, psychological databases produced information in the tens of thousands, indicating that sensitivity was high, and specificity was required. Specificity is added to a search when the number of irrelevant studies retrieved is excessive. As a method of introduction specificity and navigating the excessive volume of articles, location settings were applied to psychological databases. For example, Australia* OR (New AND Zealand) were used to ensure the inclusion of Australian or New Zealand articles with the full-text of the article. This process added specificity into the search and reduced the number of irrelevant information sources sought for inclusion into the screening process.

Selection of Studies

The retrieved information sources for potential inclusion in the review were exposed to an intensive screening process with EndNote Software, which has the necessary features to assist researchers in each screening phase of the review (Bramer et al., 2017). Information

sources were managed using EndNote software, as a systematic review has demonstrated EndNote's popularity among academics (Bramer et al., 2017; Lorenzetti & Ghali, 2013). The first phase of the screening process involved deletion of research duplicated and preliminary screening of titles to determine eligibility, with irrelevant studies excluded. Phase two of the screening process involved screening individual abstracts to identify studies appearing to meet inclusion criteria and thus forming a comprehensive list of studies (Table 7 displays a list of inclusion and exclusion criteria). Studies not containing an abstract were reviewed in full to ensure relevant studies were not excluded from the review. The third phase involved a full review of the remaining studies.

Table 7

Inclusion and Exclusion Criteria

Inclusion	Exclusion
Australian, New Zealand	Irrelevant study
Male and female	No measure of recidivism
Indigenous and non-Indigenous	Published before 1985
Age range 10-18	Broad analysis of national-level policy changed
Adjudicated and non-adjudicated young people	Broad analysis of state-level policy changes
Program addresses sexual offending behaviours.	
Recidivism as an outcome (formal legal measures, or self-reported data). It can also include other outcome measures in addition to recidivism.	
Experimental, quasi-experiment, non-experimental	
Published and unpublished studies	
Reports, government reports, published theses	

Evaluations published between 1985 and
2020
Any language

During the screening phases, if the reviewer was unable to make the decision to include or exclude a study, the decision would be determined by a binary yes/no vote from the research supervisors. If the supervisors were unable to agree on a decision, the study would be registered as a conflict and the decision for inclusion or exclusion would be deliberated and made collectively. All decisions for inclusion and exclusion were effectively made by the reviewer. The screening process remained consistent throughout the three screening phases and were based on the pre-established set of inclusion and exclusion criteria. Therefore, reducing any risk of systematic bias in the selection of studies and maximising the number of potentially relevant information source.

Results

Introduction

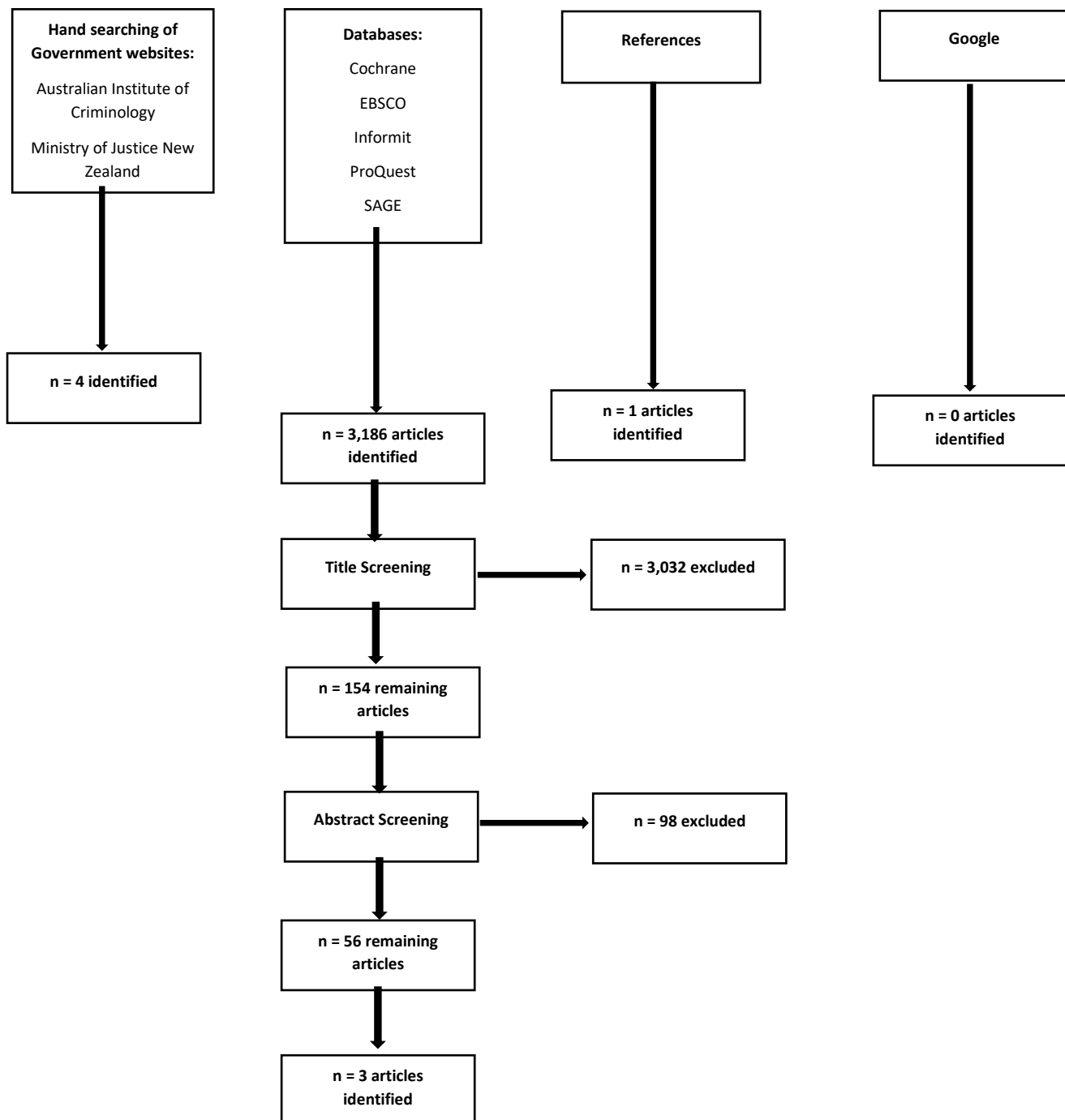
The following section provides an overview of the literature search, the process of screening, and the results yielded from the literature search strategy. A number of results were accumulated from the search process, with an outcome of eight studies included in the review. The location of the eight studies is provided and the quality of the individual studies discussed in relation to the outcomes from the Maryland Scientific Methods Scale (Sherman et al., 1997). Following this, the eight included studies were critically analysed with results categorised into six themes: general study information, treatment characteristics, characteristics of participants and victims, methodology characteristics, post-treatment recidivism outcomes, and Indigeneity characteristics. Descriptive statistics were used to summarise the data within each theme.

Literature Search Strategy

The literature strategy was implemented on five databases, with multiple journals contained within each database. Figure 7 provides an overview of the literature search process and the number of studies excluded from each of the three screening phases. The literature search strategy initially produced a large volume of results ($n = 3,186$). The largest number of results were yielded from the database SAGE ($n = 1,429$), which is host to several criminological journals including the Australian and New Zealand Journal of Criminology, Criminal Justice and Behaviour, and the International Journal of Offender Therapy and Comparative Criminology. The lowest number of results was obtained from Informit ($n = 4$), a host database for multiple journals providing material on various aspects of crime, criminal justice, and criminology in Australia (Australian Institute of Criminology 2019). The number of results collectively obtained from the five databases was promising, particularly given the tight restrictions imposed on the keyword search.

The first screening phase, title screening, involved reading the title of each article and excluding those based on irrelevance or non-adherence to the pre-determined inclusion criteria. Over three-quarters of studies were excluded from the review during the first screening phase (n = 3,031 or 95.13%). Exclusion was predominately a consequence of irrelevance, due to an association with adult offenders or other treatments modalities for excessive use of illicit drugs and alcohol. The Cochrane database had the largest number of results excluded from the review (n = 182, or 98.91%), followed by ProQuest (n = 775, or 97.85%), and EBSCO (n= 755, or 97.17%). While Informit's percentage of excluded studies were perceived as promising (75%), this was a consequence of the low number of studies yielded during the implementation of the search strategy (n = 4). The database SAGE, which retrieved the highest number of results in the initial screening phase, excluded a smaller number of results from the title screening phase (n = 1,317, 95.17%), and therefore maintained a large number of results (n=112).

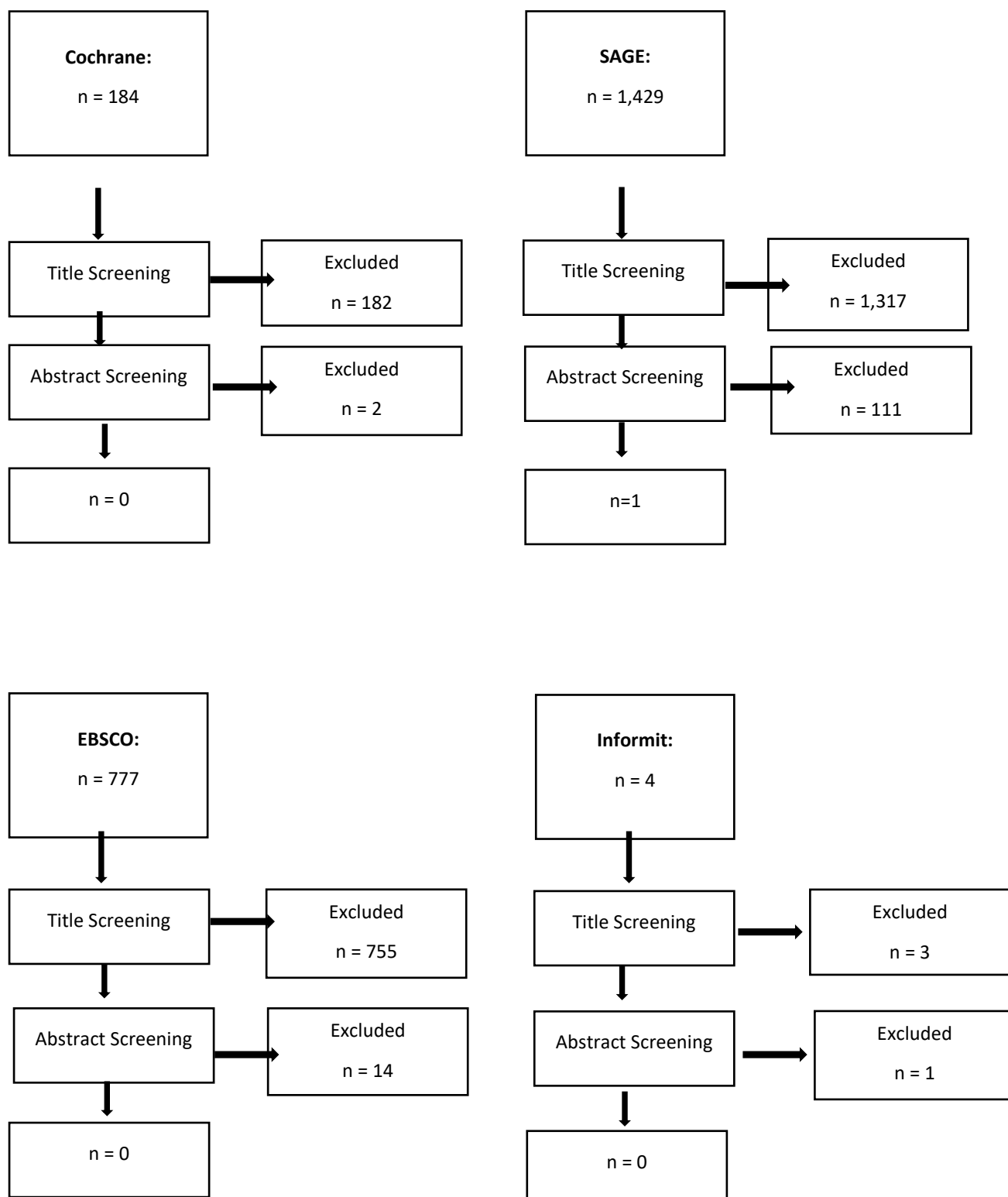
Figure 7
The Search Process

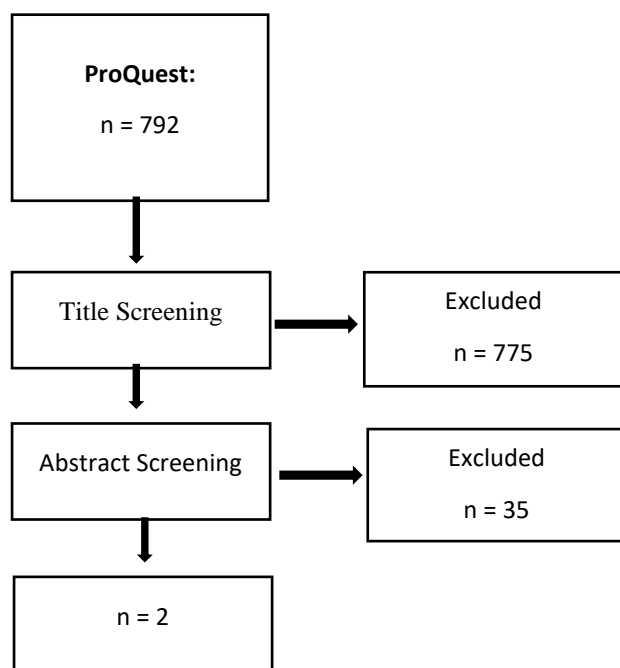


Overall, title screening (phase one) resulted in 154 studies progressing into the second screening phase. For the purpose of further illustration, Figure 8 presents the three screening phases and study findings of each individual host database.

Figure 8

The Search Process of Individual Databases





Abstracts from each study were screened during the second phase to establish whether the pre-determined inclusion and exclusion criteria could be applied. Where the titles of some studies provided inadequate information for exclusion, the abstract screening phase assisted as they are designed to provide readers with relevant summaries of information pertaining to the article. The abstract screening process eliminated over half of the remaining studies ($n = 98$, or 63.23%), the rest progressed through to the final screening phase as inadequate or limited information was presented in the abstract. These studies were unable to be excluded as they did not sufficiently meet the inclusion or exclusion criteria.

The third and final screening phase, full-text screening, involved reviewing each study in its entirety to determine the study's suitability for inclusion in the review. The full-text screening phase allowed for information that could not be provided from either the title or abstract (phases one and two). For example, some studies clearly articulated the aim of addressing sexual offending in both the title and abstract, however failed to state whether the population comprised adult or juvenile participants. Of the remaining 56 studies, the majority

were excluded as a result of full-text screening (n= 53, or 94.64%). Accordingly, three studies adhered to the inclusion criteria and were included in the review. Two of the articles were sourced from the Journal of Sexual Abuse in Australia and New Zealand and the Journal of Sexual Aggression, which is located within the host database ProQuest (see Table 8). The third study was located in the Australian and New Zealand Journal of Criminology, which is housed in the host database SAGE.

Table 8

Location of Articles

Title	Journal	Database
Responding to youth sexual offending: a field-based practice model that “closes the gap” on sexual recidivism among Indigenous and non-Indigenous males.	Journal of Sexual Aggression	ProQuest
Recidivism Following Community Based Treatment for Non-Adjudicated Young People with Sexually Abusive Behaviours	Journal of Sexual Abuse in Australia and New Zealand	ProQuest
Youth sex offending, recidivism and restorative justice: Comparing court and conference cases	Australia and New Zealand Journal of Criminology	SAGE

The final number of published studies retrieved from the search of the five host databases does not represent the overall number of information sources retrieved from the literature. Government websites were hand-searched in an attempt to gain grey literature that is not peer-reviewed or published in academic databases. Table 9 provides an overview of the grey literature and the location where the studies were sourced. A total of four studies were located within reports from government websites, adhering to the predetermined inclusion criteria, and were, therefore, included in the review. These studies were located within reports

provided by the Australian Institute of Criminology (n = 1) and the New Zealand Ministry of Justice (n = 3). An additional study was further sourced by manually searching Google Scholar and entering the keywords from the literature search strategy in numerous variations. Finally, reference lists from studies included in the review were explored as a potential avenue for the retrieval of additional studies. Two studies were discovered in reference lists of studies already included in the review, bringing the total number of grey literature sources to seven.

Table 9

Grey Literature

Title	Source
Evaluation of New Street Adolescent Services: Final Report	Australian Institute of Criminology
Not just 'old men in raincoats': effectiveness of specialised community treatment programmes for sexually abusive children and youth in New Zealand.	New Zealand Ministry of Justice
Evaluation of the Te Poutama Ārahi Rangatahi residential treatment programme for adolescent males: Final Report	New Zealand Ministry of Justice
Getting it Right. An evaluation of New Zealand community treatment programmes for adolescents who sexually offend Ka pu te ruha, ka hao te rangatahi	New Zealand Ministry of Justice
A Prospective Longitudinal Study of Sexual Recidivism Among Adolescent Sex Offenders	Google Scholar
Juvenile Justice: Evaluation Report Male Adolescent Program for Positive Sexuality	Reference List

Notes: Juvenile Justice: Evaluation Report Male Adolescent Program for Positive Sexuality was identified within a reference list and later sourced through the Edith Cowan University inter-state library loan service.

A total of ten studies adhering to the pre-determined inclusion criteria from both the literature search and hand search were included in the review. Of the ten studies, four were classified as semi-duplicates that had been published in two areas. The first study, which evaluated the New Street Adolescent Service in New South Wales, had been published as both a government report and peer-reviewed journal article. The decision was therefore made to exclude the government report as peer-reviewed publications are examined by multiple expert academics in the topic area. The second study, which evaluated three community-based programs in New Zealand, had been published as a thesis, with part of the thesis published in a government report. The decision was made to exclude the government report as the thesis included more detailed information. This resulted in eight studies progressing into the review acquired from government reports ($n = 2$), reference lists ($n = 2$), Google Scholar ($n = 1$), and peer-reviewed databases ($n = 3$). The eight studies evaluated ten programs across Australia and New Zealand.

Quality of Included Studies

In recent years a crucial competent of the systematic process is to assess the quality of studies included in systematic reviews (Farrington, 2003b; Oremus et al., 2012; Uman, 2011). Therefore, methodological quality checks were conducted to ensure systematic reviews are evaluations of high quality. While there are numerous variations of instruments for methodological quality assurance, the Maryland Scientific Methods Scale (thereinafter ‘SMS’) was selected as it is the most influential methodological quality scale in the field of criminology (Farrington, 2003b). The SMS was specifically designed for the field of

criminology by Sherman et al. (1997) at the University of Maryland for a review on crime prevention interventions. SMS communicates differences in the methodological quality of studies to scholars, policymakers, and practitioners (Farrington, 2003). To migrate from “scale complexity” and summation of scores on several specific criteria, the SMS was designed as a 5-point scale that is simple to understand at each point (Farrington, 2003). Although developed for the criminology field, the SMS has a wide application; the five levels of methodological quality are generic and can be applied to other areas of social science. Sherman et al. (1997) argued that only studies with a robust comparison group design can provide evidence that a program has caused the reported impact. On the Maryland five-point scale this equates to level three and above. The scale is as follows.

Level five of the SMS requires full randomisation of participants by conducting a randomised controlled trial (RCT) (Magdaleno & Waights, 2010). In principle, randomised experiments are presented as having acquired the highest internal validity, although they are relatively uncommon in criminology and often have implementation issues (Farrington, 1983, 2003b; Weisburd, 2000). Three criteria were adhered to for a study to attain the maximum SMS score of level five. There should be randomisation of participants, meaning there is no selection into either the treatment or comparative groups. Providing the research has a sufficient number of participants that are randomly assigned, those in the experimental group, within the limits of statistical fluctuation, will be equivalent to participants in the control group on all possible extraneous variables that potentially influence the outcome (Cook and Campbell, 1979). The implementation of “balancing tests” can be utilised to compare the treatment participants’ base rate data on a range of characteristics (Magdaleno & Waights, 2010). Attrition must also be successfully addressed as there may be elements of selection bias for dropouts. Although, if dropouts occur on a random basis, then attrition is not considered an issue. Finally, for the control group to be a suitable comparator, there

should be no contamination or interaction with the treatment groups. The effects of contamination can have a biased effect as the control group partly benefits from the treatment group (Magdaleno & Waights, 2010). Thus, studies reaching level five on the methodological quality scale have the highest possible internal validity as a result of adequate dealing of selection and regression problems.

Level four measures crime before and after the program in multiple experimental and control units, controlling for other variables that influence crime. It is characterised by the exploitation of some source of ‘quasi-randomness’; that is, the randomness that has not been deliberately imposed but arises because of some other reason (Magdaleno & Waights, 2010). For example, a group of participants may naturally migrate into two different cohorts based on factors associated with their treatment needs or desire to voluntarily engage with treatment. Therefore, treatment and control groups are, to some degree, similar on observable and unobservable characteristics. Unlike the level five RCT which has full randomisation, level four must ensure that the resulting variation in the treatment is truly random as this could result in incorrect conclusions about treatment effects (Magdaleno & Waights, 2010). Thus, the methodological design of research matching the level four criteria offers enhanced statistical control of extraneous influences on the outcome and in turn adequately handles selection and regression threats (Cook & Campbell, 1979).

The third level of SMS measures crime before and after the program in experimental and comparable conditions. The third level is considered the minimum interpretable design and is the minimum design that is adequate for concluding about what works (Cook & Campbell, 1979; Farrington, 2003b; Farrington et al., 2003). Various threats to internal validity are eliminated, including history, maturation/trends, instrumentation, testing effects, and differential attrition (Farrington, 2003). Here, the implementation of the Difference-in-Differences (DiD) method can be used, which entails comparing the treatment and control

group pre- and post-treatment (Magdaleno & Waights, 2010). The treatment effect is calculated by first evaluating the change in the outcome variable for the treated group, and then subtracting the change in the control group over the same period (Magdaleno & Waights, 2010). Therefore, the counterfactual growth path of the control group is displayed, which is a considerably better method when compared to a simple before and after treatment comparison. Level one and level two designs, are considered to be inadequate and uninterpretable (Cook & Campbell, 1979).

Level two of the SMS measures crime before and after the program, with no comparable control condition. Time series data is often used for this method and tracks individuals across a period of time (Magdaleno & Waights, 2010). While this design does establish causal order, it fails to rule out various threats to internal validity. Level one of the SMS is observant of correlations between a program and a measure of crime at one point in time. Observed changes in outcomes and not compared to a control group, and therefore the study fails to provide a sound counterfactual (Magdol et al., 1997). A study resulting in a level one design has an inadequate ability to rule out various threats to internal validity and further fails to establish casual order (Cook & Campbell, 1979). The values of the quality criteria are depicted in Table 10 from the studies included in the review. The methodological strengths and weaknesses of each article are identified through the rating scale.

Table 10

Maryland Scientific Method Scale for Methodological Quality

Author, Date	Title	SMS Level	Justification/Evidence
Allard, Rayment-McHugh, Adams, Smallbone & McKillop (2015)	Responses to youth sexual offending: a field-based practice model that “closes the gap” on sexual recidivism among Indigenous and non-Indigenous males	Level 2	No comparable control condition. The study compared offending before treatment and after treatment from the same group of individuals.

Daly, Bouhours, Broadhurst & Loh (2013)	Youth sex offending, recidivism and restorative justice: Comparing court and conference cases	Level 2	No comparable control condition. The study compared offending before treatment and after treatment from the same group of individuals.
Fortune (2007)	Not just ‘old men in raincoats’: effectiveness of specialised community treatment programmes for sexually abusive children and youth in New Zealand	Level 4	Quasi-experimental and multiple comparison groups. Treatment Completers, Treatment Dropouts, and Comparison “referrals”
Kingi & Robertson (2007)	Evaluation of the Te Poutama Ārahi Rangatahi residential treatment programme for adolescent males	Level 3	Experimental and compared the treatment group to the comparison group. No matching procedure present.
Laing, Tolliday, Kelk & Law (2014)	Recidivism Following Community Based Treatment for Non-Adjudicated Young People with Sexually Abusive Behaviours	Level 4	Quasi-experimental and comparison group, controlling for variables through statistical control as groups were matched on 6 variables.
Nisbet, Wilson & Smallbone (2004)	A Prospective Longitudinal Study of Sexual Recidivism Among Adolescent Sex Offenders	Level 2	No comparable control conditions. The study compared offending before treatment and after treatment from the same group of individuals.
Curnow, Streker & Williams (1998)	Juvenile Justice: Evaluation Report Male Adolescent Program for Positive Sexuality	Level 3	Experimental. Treatment completers are compared to participants that withdrew from treatment. No matching procedure present as participants dropped out of treatment.
Allan, Allan, Marshall & Kraszlan (2003)	Recidivism Among Male Juvenile	Level 3	Experimental and compared the treatment group to the comparison group. No

Overall, the methodological quality of the included studies was moderate. Five studies included a comparison group and contained an experimental element in the selection process, therefore, managing to equal or surpass the third level. The remaining three studies failed to reach level three and were not considered to be the minimum interpretable design, which is the minimum that is adequate for drawing conclusions about what works (Cook & Campbell, 1979; Farrington, 2003b; Farrington et al., 2003). The three studies were awarded a level two as they reported no comparable group; rather, measuring the effects of treatment before and after engagement the follow-up period. The impacts of these results are communicated throughout the discussion.

Data Coding

Each of the eligible evaluations were independently coded. Each evaluation was reviewed in-depth and six themes were produced: general study information, treatment characteristics, characteristics of participants and victims, methodology characteristics, post-treatment recidivism outcomes, and Indigeneity characteristics. The data was then coded on a wide range of variables from each of the six themes.

General Study Characteristics

The general study characteristics section provides general information on factors including when the studies data was collated, the publication type, and the location of the program evaluated. Table 11 displays the general characteristics of the individual studies. The data collection periods of the eight evaluations commenced between 1990 and 2013, with the most recent study published in 2015. Six of the evaluations were conducted in Australia and two in New Zealand. One of the New Zealand studies focusing on community-based treatment (“Not just ‘old men in raincoats’: effectiveness of specialised community treatment

programmes for sexually abusive children and youth in New Zealand”) evaluated three community-based programs delivered in three locations in New Zealand. The programs evaluated in Australia were conducted within five states: South Australia, New South Wales, Queensland, Victoria, and Western Australia. Similarly, those studies conducted in New Zealand were completed in three locations: Christchurch, Wellington, and Auckland. The studies were a mixture of peer-reviewed journal articles (n = 5), reports (n = 2), and a Ph.D. thesis (n = 1).

Table 11

General Study Characteristics

Study	Data Collected	Publication Date	Country	Type
Allard, Rayment-McHugh, Adams, Smallbone & McKillop	2006 – 2012	2015	Australia	Peer-Reviewed Article
Daly, Bouhours, Broadhurst & Loh	1995 – 2001	2013	Australia	Peer-Reviewed Article
Laing, Tolliday, Kelk & Law	2010 – 2013	2014	Australia	Peer-Reviewed Article
Nisbet, Wilson & Smallbone	N/A – 2001	2004	Australia	Peer-Reviewed Article
Allan, Allan, Marshall & Kraszlan	1990 – 1998	2003	Australia	Peer-Reviewed Article
Curnow, Streker & Williams	1993 – 1998	1998	Australia	Report
Fortune	1996 – 2004	2007	New Zealand	Ph.D. Thesis
Kingi & Robertson	1999 – 2006	2007	New Zealand	Report

Notes. Fortune (2007) comprised three young sex offender programs in New Zealand and were evaluated collectively.

Treatment Characteristics

The preceding section outlines various treatment characteristics from each evaluation, demonstrating heterogeneity between programs. Themes have been analysed, discussed, and

categorised into three sections: treatment settings, the occurrence of treatment, and treatment duration. Coded variables are discussed within each of the three sections. Seven of the evaluations were administered in the community, with one New Zealand program completed in a residential setting. It is acknowledged that each program used various interventions for addressing the sexual offending behaviour by young people, however the primary interventions identified by evaluators are Cognitive Behavioural Therapy (n = 3), Multisystemic Therapy (n = 2), and Narrative Therapy (n = 1). Two programs did not present information regard the primary treatment offered to young people. Table 12 presents an overview of treatment settings and primary interventions.

Table 12

Treatment Setting and Primary Intervention

Evaluation	Setting	Primary Intervention
Australia		
New Street	Community-Based	Multi-Systematic Therapy
Mary Street	Community-Based	Narrative Therapy
GYFS	Community-Based	Multi-Systematic Therapy
MAPPS	Community-Based	Cognitive-Behavioural Therapy
SOP	Community-Based	N/A
PSJJ	Community-Based	N/A
New Zealand		
OMIR	Community-Based	Cognitive-Behavioural Therapy
TAPR	Residential	Cognitive-Behavioural Therapy

Notes. Hereinafter the evaluation “community” refers to the study “Not just ‘old men in raincoats’: effectiveness of specialised community treatment programmes for sexually abusive children and youth in New Zealand”. Hereinafter the evaluation “TAPR” refers to the “Evaluation of the Te Poutama Ārahi Rangatahi residential treatment program for adolescent males”. Hereinafter the evaluation “MAPPS” refers to the “Evaluation Juvenile Justice Evaluation Report Male Adolescents Program for Positive Sexuality”. Hereinafter the evaluation “SOP” refers to the “Sex Offender Program implemented by the New South Wales Department of Juvenile Justice in A Prospective Longitudinal Study of Sexual Recidivism Among Adolescent Sex Offenders”. Hereinafter the evaluation “PSJJ” refers to the Psychological Service branch of Juvenile Justice in Western Australia. Hereinafter the evaluation “OMIR” refers to “Not just old men in raincoats”: effectiveness of specialised community treatment programmes for sexually abusive children and youth in New Zealand.

Entry pathways into the programs primarily involved voluntary participation and were completed through self-referral or official-referral processes. One New Zealand program took both voluntary and mandated participants. There were no programs with a sole entry requirement for mandated participants. Once accepted in the program, participants were exposed to treatment that was individualistic or both individualistic and in group settings. Two studies did not report whether the program was individualistic or group treatment. Information on the incorporation of family therapy into treatment was more limited. Five of the eight programs provide this information, recognising the incorporation of family therapy into treatment. Table 13 provides an overview of the participation type, occurrence of treatment, and the incorporation of a family element in treatment among the studies providing the information.

Table 13

Participation Type, Treatment Occurrence, and Incorporation of Family in Treatment

Treatment Characteristic	Number (n)	Percentage (%)
Participation Type		
Voluntary/Referral	6	85.72
Mandated	-	-
Both	1	14.28
Treatment Occurrence		
Individual	2	33.32
Group	-	-
Mixed	4	66.68
Family Incorporation		
Yes	5	62.50
No	-	-
N/A	3	37.5

Notes. The evaluation of SOP did not provide any information on participation type, treatment occurrence, or incorporation of family into treatment. Similarly, PSJJ did not provide information on information on treatment occurrence, or the incorporation of family in therapy.

Table 14 provides information on the minimum and maximum lengths of treatment, and the average length of treatment for each evaluation. Six of the eight programs provided information concerning the average length programs are active. Four of these evaluations provided specific details on the length of participants engagement (minimum and maximum lengths). From these four programs, participation ranged from 30 days through to 1,842 days. The shortest time of engagement was observed at the Te Poutama Ārahi Rangatahi residential treatment program in New Zealand, while the longest engagement was seen at the community-based New Street treatment in Australia. When comparing engagement in Australia and New Zealand, treatment in New Zealand was marginally longer ($M = 533$ days) than treatment in Australia ($M = 519$ days). Overall, treatment in Australia and New Zealand lasted on average approximately 488 days.

Table 14

Treatment Duration in Days

Evaluation	Minimum	Maximum	Mean
Australia			
New Street (C)	47	1842	734
Mary Street (C)	-	-	365
GYFS (C)	77	1001	435
MAPPS (C)	-	-	329
SOP (C)	-	-	-
PSJJ (C)	-	-	-
New Zealand			
OMIR (C)	-	-	519
TPAR (R)	30	821	547

Notes. Treatment duration information is presented in days. (C) = Community Based, (R) = Residential. Mary Street, MAPPS and OMIR do not provide the treatment range. SOP and PSJJ do not provide information on treatment length.

Offender Characteristics

The following section provides information on the participants engaging participating in treatment and is divided into five sections: gender, ethnicity, age, offence, previous treatment. Victim information is also provided and divided into three themes: victim age, offender's relationship to the victim, and victim type. The studies are analysed, and information is presented in relation to the individual participant characteristics, a comparison between Australia and New Zealand, and participants' characteristics as a collective.

Gender

The characteristics of young sex offenders engaging in treatment across Australia and New Zealand have commonalities (see Table 15). The majority of the participants across all programs were male ($n = 2026$, 98.40%). The number of male participants ranged from 90 per cent to 100 per cent ($n = 1315$, 98.43%) in Australia and 98 to 100 per cent ($n = 711$, or 98.20%) in New Zealand. Three programs incorporated female participants into the evaluation. The two studies in Australia had a slightly higher percentage of female participants than the New Zealand study ($n = 21$, or 2.08% and $n = 13$, or 1.80% respectively). Four community-based programs in Australia and the Te Poutama Ārahi Rangatahi residential treatment did not include female participants. The Griffith Youth Forensic Service had two female participants, however, they were excluded due to insufficient numbers and limited confidence that their circumstances were sufficiently similar to include them with male participants (Allard et al., 2016). The New South Wales Sex Offender Program caters for both male and female young sex offenders, but excluded females from the sample due to low numbers (Nisbet et al., 2004). Consistently, eight females were excluded in the analysis from the Psychological Service of the Juvenile Justice division in Western Australia (Allan et al., 2003). The Male Adolescent Program for Positive Sexuality

(Curnow et al., 1998) and Te Poutama Ārahi Rangatahi (Kingi & Robertson, 2007) do not accommodate young females.

Table 15

Number and Percentage of Male Participants

Program	Number	Percentage
Australia		
New Street (C)	90	90
Mary Street (C)	354	97
GYFS (C)	104	100
MAPPS (C)	138	100
SOP (C)	303	100
PSJJ (C)	326	100
New Zealand		
OMIR (C)	669	98
TPAR (R)	42	100

Age

The age of participants in treatment ranged from 10 to 18 years of age, with most studies reporting participants to be approximately between 15 or 16 years of age at first referral. Griffith Youth Forensic Service in Australia had a slightly lower median age of 13 years. The Te Poutama Ārahi Rangatahi residential treatment in New Zealand had an age cut off before the participants turned 17 years of age. The restriction of age in the Te Poutama Ārahi Rangatahi residential treatment is a result of the Care and Protection provisions of the Children, Young Persons, and Their Families Act 1989 (CYF). The young males placed in Te Poutama Ārahi Rangatahi were under the custody of CYF; however, the order expires when

participants turn 17 years of age. The Psychological Service branch of Juvenile Justice in Western Australia had an age range of 9 years 10 months to 17 years 11 months. Given the age of criminal responsibility in Western Australia is set at 10 years of age, Allan et al. (2003) note this as a possible error.

Offence

Participants engaged in various types of sexual offending and can be referred or mandated to treatment. The offending behaviour is generally categorised as either contact ‘hands-on’ or non-contact ‘hands-off’ offending. Hands-on offending includes contact behaviours such as penial, digital or object penetration that is either vaginal or sodomy, indecent assault, and genital oral contact (Fortune, 2007). Hands-off offences are non-contact behaviours such as voyeurism, child pornography, exposure, public masturbation, sexualised language, and obscene calls, letters, or emails (Fortune, 2007).

In Australia, four studies provided information on hands-on and hands-off offending. The percentage of hands-on and hand-off offending before treatment and missing information is displayed in Table 16. Most participants in Australia received treatment for hands-on sexual offending (82.45%). Of the Australian programs, the Griffith Youth Forensic Service had the highest percentage of young people charged with a hands-on offence. While the percentage of hands-off offending was relatively small, the Mary Street program had the highest percentage of hands-off offenders referred to treatment. No Australian evaluations provided information on offenders engaging in both hands-on and hands-off offending. New Zealand’s community-based study had a higher percentage of hands-off offenders in comparison to hands-on or both hands-on and hands-off. All referrals to Te Poutama Ārahi Rangatahi in New Zealand are a direct result of hands-on offending. Thus, treatment in Australia and New Zealand are more inclined to be characterised by young sex offenders that have been involved in hands-on offending.

Table 16

Percentage of 'Hands-On' and 'Hands-Off' Offences

Program	Hands-On Offences (%)	Hands-Off Offences (%)	Both (%)
Australia			
New Street (C)	60.0	-	-
Mary Street (C)	86.0	14.0	0
GYFS (C)	94.2	9.6	-
MAPPS (C)	89.61	10.39	0
SOP (C)	-	-	-
PSJJ (C)	-	-	-
New Zealand			
OMIR (C)	27.2	36.3	33.0
TPAR (R)	100	0	0

Notes. Percentages are for those known offences against victims. Treatment offered by the Griffith Youth Forensic Service exceeds 100 per cent as participants who engaged in both hands-on and hands-off offending are categorised again in a separate category. SOP provided information for hands-on offending where the victim was known (n=101) and where the age of the victim was known (n=75). MAPPS offences are those proven in court. PSJJ grouped hands-on and hands-off offending together and did not delineate quantitatively between the two offence types.

Previous Treatment

The Te Poutama Ārahi Rangatahi residential treatment facility is the only evaluation providing information on participants who received treatment for sexual behaviours before entering the facility (see Table 17). The information available was minimal, but previous treatment sought by young sex offenders were those community-based treatments identified in the study “Not just ‘old men in raincoats’: effectiveness of specialised community treatment programs for sexually abusive children and youth in New Zealand”. The treatments included SAFE Auckland, WellStop Wellington, and STOP Christchurch.

Table 17

Prior Sexual or General Offending Treatment Engagement

Treatment	Type	Sexual or General	Percentage
TPAR (R)	Community-based	Sexual	N/A

Notes. N/A = Not Available. “Type” refers to the type of treatment that participants attended before entering Te Poutama Ārahi Rangatahi.

Victim age

The age of individuals victimised by young offenders receiving treatment was available in six of the eight studies. There was diversity in the way studies reported victim age in Australia, therefore an overview of the approximate age of victims is presented. Four of the six Australian studies providing victim age information suggest almost all victims were under 18 years of age, with a large proportion under the age of 12. The two New Zealand studies provided more detailed information. Participants attending community-based programs in New Zealand (OMIR) predominately victimised children 12 years of age or younger. While the age of victims of young people attending Te Poutama Ārahi Rangatahi is more intermittent, most victims were aged between five and ten ($n = 35$), followed by victims aged under five ($n = 24$) and a smaller number aged between 10 and 15 years ($n = 14$).

Relationship to victim

Information on participant’s relationship to victims is provided in Table 18. The three Australian evaluations that provided information regarding the offender’s relationship to the victim(s) had a high number of sexual offending cases that were intra-familial ($n = 271$, or 48.13%). The highest number of intra-familial offending in Australia is seen in the New Street evaluation. While the relationship to victim information in the Australian studies is displayed as the index offence, the New Zealand information is presented as the total number of offences against victims. In the New Zealand community-based study 682 young people

committed a total number of 2,259 sexual offences. The total number of sexual offences, a smaller sample of young people offended against strangers (n = 148). This is in comparison to intra-familial offending (n = 730) and offending against someone unrelated but known to the young person (n = 1,295). In comparison to Residential treatment in New Zealand predominately acquired participants who victimised intra-familial (n= 41) or someone known to the offender but unrelated (n = 28). Similarly, there was a lower rate of offending against strangers (n = 6).

Table 18

Offender Relationship to Victim

Program	Intra-familial	Known, Unrelated	Stranger
Australia			
New Street (C)	60	-	-
Mary Street (C)	47.12	-	-
GYFS (C)	-	-	-
MAPPS (C)	28	10	24
SOP (C)	-	-	-
PSJJ (C)	-	-	-
New Zealand			
OMIR (C)	32.3	57.3	6.6
TPAR (R)	54.7	37.3	8.0

Notes. The results are displayed as a percentage. Australia is displayed as the index offence. New Zealand is displayed as the total number of offences. MAPPS does not quate to 100 per cent as some relationships were not identified.

Victim Gender

Information on the gender of the victim participants sexually offended against were reported in six of the eight evaluations. In Australia, the victim type for the four community-based programs reporting the information is predominately female (70.09%) (see Table 19).

The Griffith Youth Forensic Service had the highest percentage of female-only victims, while New Street had the highest percentage of offenders victimising males only. Results were lower for the community-based programmatic intervention in New Zealand, with half of the treatment population victimising females only. The number of participants victimising both males and females was high. In comparison to the community-based programs in Australia and New Zealand, participants in the residential treatment tended to victimise both males and females, than females only. When analysing the participants offended against either female only (60.67%), with female and male victims (19.39%) and male-only victims (19.82%) has a similar percentage.

Table 19

Victim Type Based on Gender (%)

Program	Male %	Female %	Both %
Australia			
New Street (C)	33	52	15
Mary Street (C)	24.1	75.89	0
GYFS (C)	-	-	-
MAPPS (C)	17	64	19
SOP (C)	20	72	8
PSJJ (C)	-	-	-
New Zealand			
OMIR (C)	16.72	50.0	33.28
TPAR (R)	9.77	31.70	58.53

Methodological Characteristics

Characteristics of the methodology sections are divided into three themes: the design of the included evaluations, the size of the sample utilised, and the group allocation and comparison type of the evaluations.

Research Design

One study provided information on the design used, therefore, the other evaluations were allocated a design that resembled the study. Allocations were based on the information provided on the assessment of studies using the Maryland Scientific Methods Scale. Table 20 shows the research design allocations of the studies. Two studies were classified as a quasi-experimental design, which is generally used for the evaluation of programs or policies. The program is an “intervention” and the treatment, comprised of the elements of the program being evaluated, is tested for how well it achieves its objective (Punch, 2013). Quasi-experiments lack a control group, but utilises a comparison group similar to the treatment group in terms of base rate pre-intervention characteristics (Punch, 2013). Thus, the quasi-experimental research design is generally used in sex offender treatment evaluations as it is unethical to deny treatment to a sex offender for the purpose of research. The comparison group captures the plausible outcome if the program had not been implemented. As a result, the program can be said to have caused a difference in outcomes between the treatment and comparison groups. One Australian study (New Street) and the two New Zealand studies were identified as quasi-experimental due to the inclusion of comparison groups that were non-randomised.

There are, however, methodological implications associated with using comparative groups to test the effects of treatment that are based on treatment completers, dropouts, and refusers. While commented on more in-depth in the discussion, it is important to acknowledge that the same casual inference of treatment

completers is not observed in treatment dropouts and refusers. However, observations can be made on the effects of no engagement in treatment and those of initial engagement, but later dropping out.

The five remaining studies were not classified as quasi-experimental due to the lack of a comparison group to determine the effect of treatment. The five Australian community-based studies were classified as utilising a cohort study design. Observations of participants exposed to treatment are classified as cohort studies and provide valuable knowledge about benefits or harms associated with interventions (Greenfield & Greener, 2016). The design is longitudinal and the observation of participants over a period of time is particularly important. Various factors that have the potential to affect the outcome of the program often become apparent well after the program has been completed (Greenfield & Greener, 2016). These five studies used longitudinal data to demonstrate the effects of treatment after implementation and completion.

Table 20

Study Design

Study	Design
Australia	
New Street (C)	Quasi-Experimental
Mary Street (C)	Cohort Study
GYFS (C)	Cohort Study
MAPPS (C)	Cohort Study
SOP (C)	Cohort Study
PSJJ (C)	Retrospective Cohort Study
New Zealand	
OMIR (C)	Quasi-Experimental

TPAR (R)

Quasi-Experimental

Notes. OMIR was noted by the author to be a naturalistic treatment outcome study. It is naturalistic in the sense that participants migrate into one of three cohorts. Studies that were not quasi-experimental were cohort studies. While it is anticipated based on the dates of the data collected that the majority were retrospective cohort studies; the designs remained a cohort study unless explicitly specified by the authors as retrospective.

Sample Size

The sample size (Treatment Group + Comparison Groups) for the evaluations across Australia and New Zealand as a collective was large (see Table 21). Treatment groups have been defined as those participants that successfully complete treatment. The comparison groups can comprise both participants who dropped out or were unsuccessful in completing treatment, and participants that refused or were unable to engage in treatment. When excluding Te Poutama Ārahi Rangatahi, the community-based treatment range varied from 100 participants to 682 participants. Australia accumulated a larger number of participants ($n = 1,336$) in comparison to New Zealand ($n = 723$). Considering the study of New Zealand's community-based interventions comprised three studies, there continued to be a higher mean average of participants within the studies ($m = 361.5$) than Australia's community-based interventions ($m = 222.66$). Moreover, both the community-based studies and residential study in New Zealand had comparison groups, while only two Australia studies had a comparative group. This resulted in Australia acquiring a higher number of participants in treatment groups than the comparison group.

Table 21

Sample Size

Program	Sample Size	Treatment Group	Comparison Group
Australia			
New Street (C)	100	34	66

Mary Street (C)	365	365	0
GYFS (C)	104	104	0
MAPPS (C)	138	-	-
SOP (C)	303	303	0
PSJJ (C)	326	73	237
New Zealand			
OMIR (C)	682	217	465
TPAR (R)	41	17	24

Notes. Studies providing information on a comparison group and a treatment dropout group were combined into the comparison group section. MAPPS includes participants that dropped out of treatment, although data does not discriminate between those that completed treatment and those who did not. In the PSJJ study, 73 participants received treatment, 24 were referred to a different treatment or referred and did not receive treatment, and 213 had no contact. Information is not published on the 16 remaining participants.

The two New Zealand studies elaborated on the number of participants that initially engaged in treatment, although dropped out, were excluded or did not successfully complete treatment. Community-based treatment in New Zealand had a lower number of treatment dropouts ($n = 165$, 24.19%) compared to the treatment group ($n = 217$, 31.81%) and comparison group ($n = 300$, 44%). Residential treatment in New Zealand had a higher number of treatment dropouts ($n = 24$, 58.5%) compared to treatment completers within the program ($n = 17$, 41.5%).

Group Allocation and Comparison Type

Four of the eight studies included a comparison group, comprising either young people who dropped out of treatment or refused treatment, to understand the effects of the program against those successful young people. Table 22 demonstrates the type of matching procedure used to allocate participants to group's coinciding with the number of matched variables. Only the New Street community-based program in Australia used a matching procedure. The study utilised statistical matching for young people accepted

into the program with the first referral case in the same year on the following six variables: gender, age, the gender of the index victim, the relationship between index victim and young offender (friend, close relative, sibling, other), nature of the index offence (no penetration, penetration), and living circumstances at referral (family, relative care, relative or non-family). One Australia study and the two New Zealand studies did not implement a matching procedure for the allocation of participants into groups. Rather, participants naturally progressed into either the treatment group or one of the comparison groups based on either an incomplete assessment or the young person did not commence treatment. An assessment may not have been completed or a young person may not commence treatment due to various factors; such as, client imprisoned, unable to contact client or family, did not meet the entry criteria, referred to another service provider, family/whānau or client refused or withdrew, or the statutory agency withdrew referral or funding. As participants in the three evaluations naturally progressed into either the treatment or a comparison groups the matching of variables did not occur.

Table 22

Group Matching Procedure

Program	Group Allocation	Matching	Variables (n)
Australia			
New Street (C)	Statistical Matching	Yes	6
PSJJ (C)	Natural	No	-
New Zealand			
OMIR (C)	Natural	No	-
TPAR (R)	Natural	No	-

Recidivism Post-Treatment

Information regarding the variations in post-treatment follow-up periods is provided, with the parameters of recidivism clarified and the source of the recidivism information. Following this, information is provided on the sexual, violent or serious, and “other” offending behaviours of young people in the treatment group. For the purpose of this section offending categorised as “other” is defined as an offence that is non-sexual and non-violent. Finally, a group comparison between the treatment group, dropout group, and comparison group is performed for the three types of offending, and triangulation of data.

Follow-Up Period in Days

Data on sexual offending that occurred during the post-treatment follow-up period was recorded for all studies. There were large variations in the duration of the post-treatment follow-up period ranging from 5 days to 4,701 days (see Table 23). The programs implemented in Australia ($m = 1,643.65$ days) had a larger mean average follow-up period than New Zealand ($m = 1,340.63$ days). The Sex Offender Program offered in New South Wales had the largest mean average follow-up period in Australia. The largest mean average follow-up period in New Zealand is smaller than the largest follow-up period in Australia. The smallest mean average follow-up period was observed in the Griffith Youth Forensic Service. Overall, the average post-treatment follow-up period of all studies was 1,599.04 days.

Table 23

Follow-Up Periods

Study	Range	Mean
Australia		

New Street (C)	Up to 2,555	1,672
Mary Street (C)	154 to 2,520	1,429.58
GYFS (C)	5 to 2,045	920.31
MAPPS (C)	-	1,642.5
SOP (C)	1,694 to 4,701	2,664.5
PSJJ (C)	Up to 3,255	1,533
New Zealand		
OMIR (C)	367 to 3,647	1,625.4
TPAR (R)	90 to 2,585	1,305

Recidivism Definition and Source of Information

Recidivism is defined in terms of its nature; sexual, violent or serious, or non-sexual and non-violent (“other”). Sexual recidivism can include, but is not limited to, offences such as rape, attempted rape, sexual assault, indecent exposure, wilful exposure, child pornography offences, bestiality, and prostitution-related offences. Violent or serious offending encompasses a range of behaviours where there is actual or threatened violence against a person with an element of intent, such as assault, robbery, abduction, extortion, and break and enter of a dwelling with violence or threats, going armed to cause fear, and homicide. Other non-sexual and non-violent include theft, fraud, dangerous driving, property damage, illicit drugs, public order offences, and break and enter. All evaluations included in the review focused on sexual recidivism, with some programs further contributing to knowledge on violent or serious, and other non-sexual and non-violent recidivism. Australian evaluations generally excluded traffic and vehicle regulatory offences as this is an action against the Traffic Act rather than the Criminal Code (Allard et al., 2016). One Australian study provided Traffic offence information

(Allan et al., 2003), however the data was excluded from the review. The evaluations conducted in New Zealand included traffic breaches in the “other” category. Moreover, breaches against community-based orders were excluded from all studies in this review due to the offence representing a failure to apply with court-imposed conditions rather than offending.

Seven of the eight evaluations provided a definition of recidivism. A formal conviction was generally defined as a conviction made by a court against the young person. Additionally, a charge was defined as a young person being formally dealt with by the Criminal Justice System or a charge from the police. Three of the seven studies used both conviction and charge information as the definition of recidivism (see Table 24). Three studies in Australia did not utilise conviction within the definition and focused exclusively on charges against young people. One Australian study used only reconviction data. No studies incorporated formal cautioning by police within the definition of recidivism. One study provided data on information reported to police, although insufficient evidence resulted in the young people not receiving a charge.

Recidivism information was obtained from either police or governmental agencies, which are nationally based and provide detailed criminal records from the youth justice system and the adult justice system. No studies use self-reported information in an attempt to retrieve recidivistic behaviours that failed to come to the attention of the criminal justice system. In Australia, five evaluations obtained recidivism information from police records. One Australian study (Mary Street) did not retrieve recidivism information directly from the police, rather retrieving information from the Sexual Assault Archival Study within the South Australian Justice Data Warehouse. Offending by young people in New Zealand is dealt with through the Youth Justice system, which involves the Youth Court and the Department of Child, Youth and Family

(CYF). Thus, information on recidivism was sourced from both the New Zealand police and the CYF.

Table 24

Recidivism Definition and Information Source

Program	Definition		Information Source		
	Conviction	Charge	Police	Government Agency	Self-Reported
Australia					
New Street (C)	No	Yes	Yes	No	No
Mary Street (C)	No	Yes	No	Yes	No
GYFS (C)	Yes	Yes	Yes	No	No
MAPPS (C)	No	Yes	Yes	Yes	No
SOP (C)	-	-	Yes	Yes	No
PSJJ (C)	Yes	No	Yes	Yes	No
New Zealand					
OMIR (C)	Yes	Yes	Yes	Yes	No
TPAR (R)	Yes	Yes	Yes	Yes	No

Notes. For simplicity, results are presented as binary Yes or No.

Recidivism Among Treatment Completers Post-Treatment

The programs in the review are all specifically designed to address sexual offending in young people and to reduce recidivism. To measure the success, the studies sought post-treatment recidivism information that came to the attention of the criminal justice system during a prescribed follow-up period. Information was further provided for violent or serious recidivism, and non-sexual and non-violent recidivism during the prescribed follow-up timeframe. Table 25 demonstrates the sexual, violent or serious, and other non-sexual and non-violent offending by those young treatment completers during the follow-up period.

In the present study a sexual recidivism rate of zero per cent post-treatment was not apparent. In Australia 68 of the 1,003 treatment completers (6.78%) re-offended sexually, with two evaluations accounting for the majority of sexual recidivists. A lower sexual recidivism rate was observed in New Zealand with seven of the 234 treatment completers (2.99%) re-offending sexually, which ranged from one individual in residential treatment to six in the community study. The Psychological Service branch of Juvenile Justice in Western Australia had the highest percentage of sexual recidivists in the treatment group, with the Griffith Youth Forensic Service most likely to observe a lower level of sexual recidivistic behaviours. The overall rate of sexual recidivism in the treatment group across Australia and New Zealand was 78 participants (6.31%).

While programs in the review were specifically designed to address sexual offending, these programs also had a positive impact on reducing violent or serious offending. Four programs measured the rate of violent or serious offending post-treatment. The Te Poutama Ārahi Rangatahi residential treatment program, Male Adolescent Program for Positive Sexuality, and the New South Wales Sex Offender Program were excluded from this section of the analysis as the studies did not discriminate between the

treatment and comparison groups on violent or serious re-offending. In Australia, 88 of the 503 treatment completers re-offended violently or seriously (17.50%), ranging from two to 63 participants. New Zealand had a lower violent or serious recidivism rate ($n = 8$, 3.69%), although acquired a smaller population of 217 participants when compared to Australia. The overall rate of violent or serious recidivism in the treatment group across Australia and New Zealand was 96 participants (13.33%), with a range of two to 63 young people.

Five of the seven programs provided information on young people that engaged in a non-sexual and non-violent offence. Two programs were excluded from this section of the review as they did not report non-sexual and non-violent recidivism, or they did not discriminate between treatment completers, dropouts, and refusers (New Street and Te Poutama Ārahi Rangatahi, respectively). In Australia, 350 of the 899 young people (38.93%) re-offended non-sexually and non-violently. New Zealand had a considerably lower rate of “other” recidivistic behaviours, with 11.06 per cent of young people ($n = 24$) in the treatment group engaging in a non-sexual and non-violent offence during the prescribed follow-up period. Collectively, 374 of the 1,581 young people in the sample (23.66%) engaged in an “other” offence, which ranged from 24 in New Zealand to 179 in Australia.

Table 25

Sexual, Violent or Serious, and “Other” Recidivism among Treatment Completers

	Sexual		Violent/Serious		Other	
	N	%	N	%	N	%
Australia						
New Street (C)	1	2.94	2	5.88	-	-
Mary Street (C)	32	8.77	63	17.26	103	28.22
GYFS (C)	1	0.96	23	22.12	61	58.65
MAPPS (C)	1	0.7	-	-	7	5.0
SOP (C)	25	9.0	-	-	179	61.3
PSJJ (C)	8	11.0	-	-	-	-
New Zealand						
OMIR (C)	6	2.76	8	3.68	24	11.06
Residential (R)	1	5.88	-	-	-	-

Notes. Totals are calculated as a percentage of the total number of participants in the comparison group (not the whole sample). Results for SOP are calculated at 292 participants as 11 either could not be found in databases or committed suicide post-treatment. Results from SOP classified “other” offences as non-sexual. Violent/Serious and “other” offending in PSJJ was excluded as the authors provided information on “offences against the person” but did not provide a definition of the included offences.

Sexual, Violent or Serious, and “Other” Recidivism: A Between-Groups Comparison

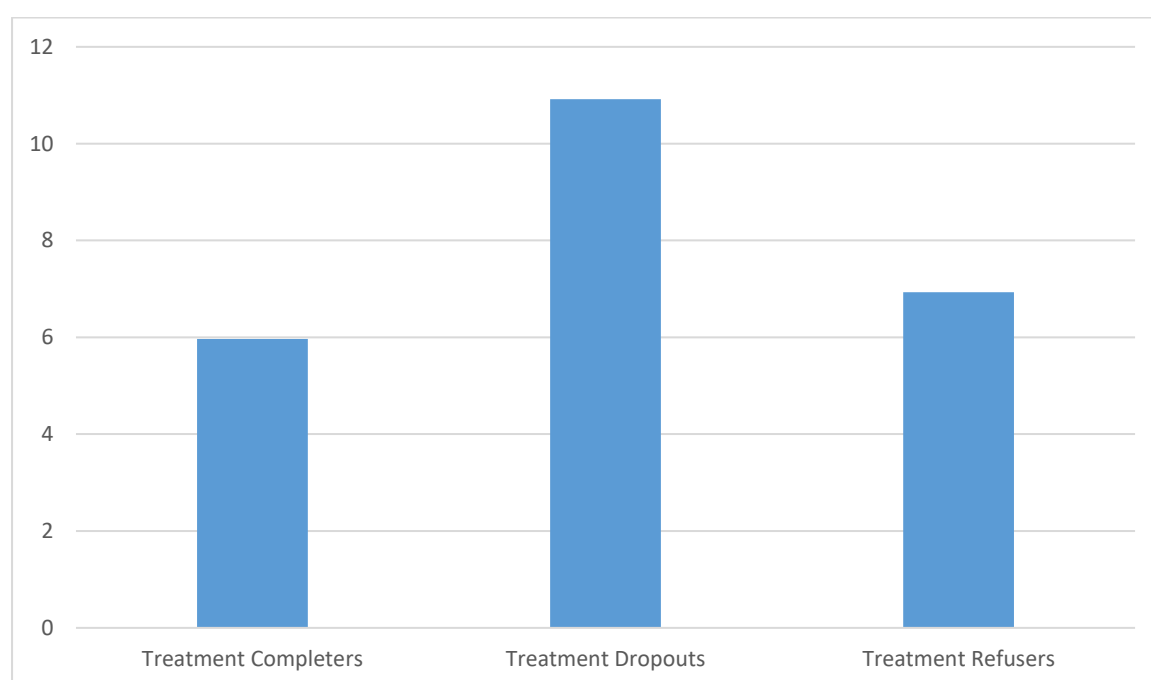
A comparison of sexual, violent or serious, and other recidivist behaviours between participants who completed treatment, those who dropped out or withdrew, and those young people who did not receive treatment was conducted. Table 26 provides an overview of the between-groups comparison. Studies provided information in different formats or provided limited information. The New Street study did not provide information on recidivism that was non-sexual and non-violent, which was classified as “other”. Mary Street and the Griffith Youth Forensic Service did not include a comparison group or information on participants who dropped out or withdrew from treatment. Finally, while Te Poutama Ārahi Rangatahi did provide information on participants who sexually re-offended; the author did not delineate between the three groups when discussing violent or serious offending, and non-sexual and non-violent offending. Regardless, the results are valuable as they demonstrate the effectiveness of treatment for reducing sexual recidivism, specifically against the comparison groups. They further demonstrate the effectiveness of treatment for reducing violent or serious, and non-sexual non-violent re-offending against those participants who did not complete treatment.

The New Street program provides recidivism information differentiating between the treatment group and comparison groups, demonstrating young people who completed treatment are less likely to recidivate sexually (2.94%) when compared to dropouts (6.0%) and treatment refusers (18.8%). Comparatively, it is reported in the Psychological Service branch of Juvenile Justice young people who did not encounter the service were least likely to sexually recidivate (8.3%), followed by treated participants (11.0%) and others who were referred to the service but did not receive treatment or received treatment elsewhere (16.66%). These results must be interpreted with caution as it cannot be ruled out that a

different agency provided treatment to those with no contact. Similar sexual recidivism rates were reported in the New Zealand community-based study for treatment completers (2.76%), although dropouts were more inclined to sexually recidivate when compared to treatment refusers (9.69% and 5.67% respectively). Among all studies, 5.97 per cent of treatment completers ($n = 75$) recidivated sexually during the post-treatment follow-up period. This result is in comparison to 10.92 per cent of participants who dropped out of treatment ($n = 25$) and 6.93 per cent ($n = 39$) who refused to engage in treatment (based off results of studies providing the information). Figure 9 illustrates these differences.

Figure 9

Between Groups Sexual Recidivism Rates (%)

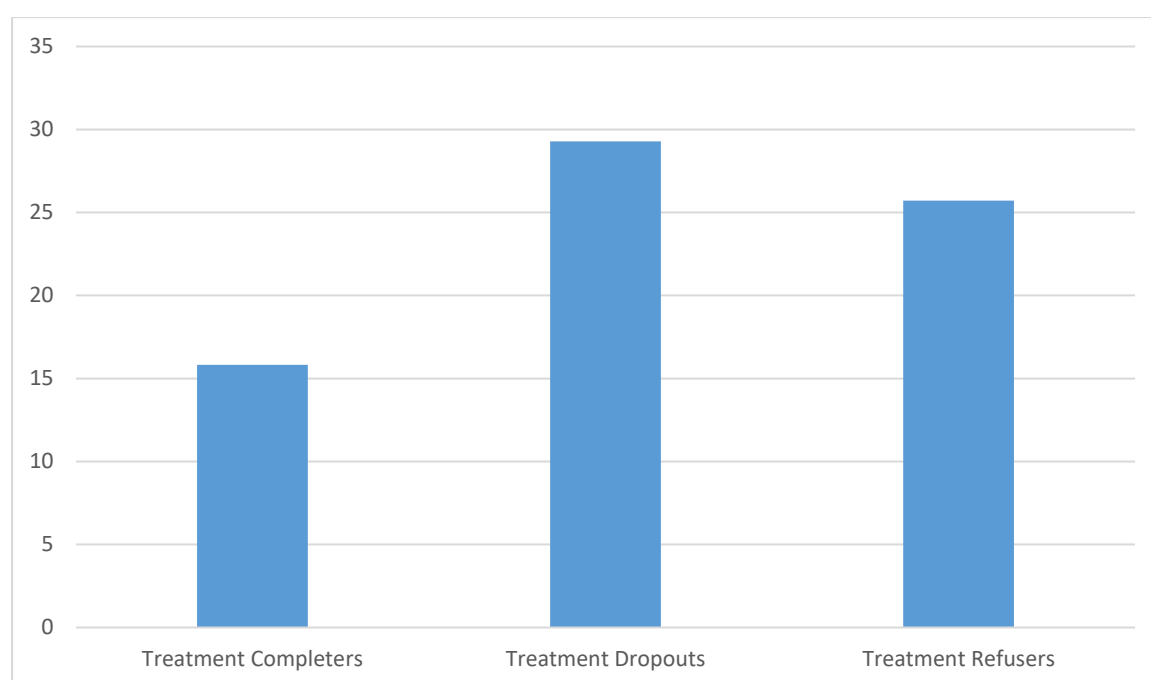


An investigation of re-offending that constituted a violent or serious offence showed more variance between the groups, particularly between the treatment group and the comparison groups (see Figure 10). Four of the eight evaluations provided some information on violent or serious offending post-treatment. Treatment completers were less inclined to re-offend in a violent or serious manner ($n = 114$, 15.83%), when compared to dropouts ($n = 53$, 29.28%) and treatment refusers ($n = 90$, 25.71%). Two of the eight evaluations provided

complete information on the three comparative groups for violent or serious recidivism. Participants who completed treatment at New Street were less likely to re-offend violently or seriously (5.88%), then those who dropout out of treatment (12.5%) or those who did not engage in treatment (26.0%). A higher rate of violent or serious recidivism was seen in the treatment cohort of New Zealand’s community-based study (11.52%) when compared to New Street. These recidivism rates remained high for dropouts (30.90%) and treatment refusers (25.67%). It is therefore evident that young people attending treatment at New Street were less inclined to recidivate in a violent or serious manner (17%) when compared to New Zealand’s community-based treatment (22.58%).

Figure 10

Between Groups Violent or Serious Recidivism Rates (%)



The variance between the three groups was large for non-sexual and non-violent recidivism during the follow-up period. Only one study (New Zealand community-based evaluation) provided complete information on a between-groups comparison for “other” types of offending post-treatment. Between the groups, the treatment completer cohort acquired the least number of non-sexual and non-violent offending post-treatment (36.01%),

with dropouts and treatment refusers more prone to engage in “other” offending (62.4% and 41.33% respectively). The findings signify that young sex offenders who drop out of treatment are considerably more inclined to engage in non-sexual and non-violent offending post-treatment (see Figure 11). Recidivism results for “other” offending were calculated for all participants in each group to understand the differences between programmatic interventions in Australia and New Zealand. The results suggest “other” offending post-treatment is similar for both Australia (n = 394, 43.29%) and New Zealand (n = 310, 45.45%).

Figure 11

Between Groups Non-Sexual and Non-Violent Recidivism Rates (%)

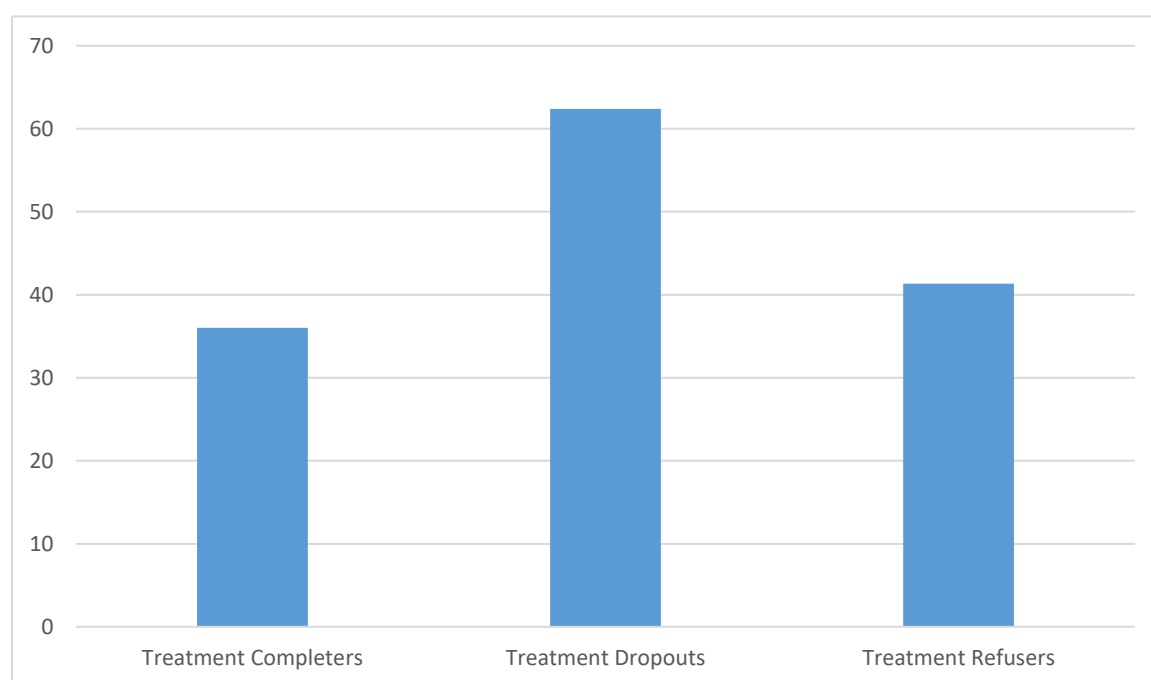


Table 26

Between-Groups Comparison of Sexual, Violent/Serious, and Other Recidivism.

	Sexual			Violent/Serious			Other		
	T	D	C	T	D	C	T	D	C
Australia									
New Street (C)	1	3	3	2	2	13	-	-	-
Mary Street (C)	32	-	-	63	-	-	103	-	-
GYFS (C)	1	-	-	23	-	-	61	-	-
MAPPS (C)	1	-	-	-	-	-	7	44	-
SOP (C)	25	-	-	-	-	-	179	-	-
PSJJ (C)	8	4	19	-	-	-	-	-	-
New Zealand									
OMIR (C)	6	16	17	26	51	77	83	103	124
TPAR (R)	1	2	-	-	-	-	-	-	-

Notes. T = Treatment Group, D = Dropout Group, C = Comparison Group. Data resulted in a “-” if the study did not comprise the group, or if information on the group was unobtainable. Five dropouts from MAPPS recidivate sexually; although, the evaluation does not state how many participants dropped out. Information is missing if the program had only a treatment group, or the evaluation did not delineate between groups, or failed to provide the information. PSJJ provides information on all recidivism that is non-sexual which can be categorised into violent/serious and other offending. However, the authors do not delineate between those who completed treatment, those who were referred but did not receive treatment and those who had no contact with the service.

Triangulation of Treatment, Dropout, and Comparison Group Recidivism Data

Triangulation of data was performed from the individual evaluations to demonstrate the total number of sexual, violent or serious, and other non-sexual non-violent offending during the post-treatment follow-up period. Table 27 presents the triangulation of data between the treatment group, the dropouts, and those who did not receive treatment. The New Street study did not provide information on “other” re-offending. Moreover, MAPPS and the New South Wales Sex Offender Program do not provide information on violent or serious re-offending during the post-treatment follow-up period. Finally, the Psychological Service branch of Juvenile Justice collates all non-sexual offending in one category, which has been provided under “other” offending.

The rate of sexual recidivism in Australia and New Zealand was 6.99% ($n = 144$), which ranged from 1 person to 39 people within the individual studies. In Australia, 7.63% of young people sexually recidivated during the follow-up period ($n = 102$, range = 1 - 32). Comparatively, 5.67% recidivated in the New Zealand ($n = 42$, range = 3 – 39). The Psychological Service branch of Juvenile Justice had the highest number of treated offenders who sexually re-offended, with the Griffith Youth Forensic Service most likely to see a reduction in sexual offending.

The overall rate of violent or serious recidivism in Australia and New Zealand was 21.52% ($n = 278$, range = 17 - 154). In Australia, 18.10% of young people re-offending violently or seriously ($n = 103$, range = 17 – 63), with 24.20% of New Zealand participants recidivating in this manner ($n = 175$, range 21 - 154). Te Poutama Ārahi Rangatahi was most prone to violent or serious recidivism post-treatment, with half of participants re-offending in this nature. Comparatively, New Street had the least violent or serious recidivism post-treatment.

Seven programs provided information on non-sexual and non-violent offending post-treatment, with 951 of the 1959 young people (48.55%) re-offending in this manner. Higher rates of non-sexual and non-violent offending was observed in the Griffith Youth Forensic Service, NSW Sex Offender Program and Psychological Service branch of Juvenile Justice in Western Australia, with more than half of participants engaging in non-sexual and non-violent offending. Mary Street was observed as having the lowest percentage of non-sexual and non-violent recidivists. In Australia, data on non-sexual and non-violent recidivism was provided in four studies, with 49.35% recidivating ($n = 610$, range = 51 – 216). New Zealand had a similar percentage, with almost half of young people (47.16%) committing a non-sexual non-violent offence post-treatment ($n = 341$, range = 31 – 310).

Finally, results were calculated for all studies to understand the type of offending young people are more inclined to engage in during the post-treatment follow-up period. Participants were substantially less inclined to engage in a sexual offence ($n = 144$, 6.99%). This is in comparison to violent or serious offending ($n = 278$, 21.52%) and non-sexual and non-violent offending ($n = 951$, 48.55%). Given that self-report information on re-offending post-treatment was not incorporated, it can be concluded that these figures represent the minimum number of offences committed by young people post-treatment.

Table 27

Triangulation of Group Data

	Sexual		Violent/Serious		Other	
	N	%	N	%	N	%
Australia						
New Street (C)	7	7	17	17	-	-
Mary Street (C)	32	8.77	63	17.26	103	28.22
GYFS (C)	1	0.96	23	22.12	61	58.65
MAPPS (C)	6	4.35	-	-	51	36.96
SOP (C)	25	8.56	-	-	179	61.30
PSJJ (C)	31	9.5	-	-	216	66.3
New Zealand						
OMIR (C)	39	5.72	154	22.58	310	45.45
TPAR (R)	3	7.31	21	51.22	31	75.61

Notes. The percentage of studies is presented as a percentage of the whole sample (Treatment Completers, Treatment Dropouts, and Treatment Refusers). PSJJ categorised all offences into non-sexual; therefore, information is missing on violent/serious recidivism as these offences were included as other.

Indigeneity and Remoteness in Studies

Australia and New Zealand are two countries with criminal justice systems overrepresented by Indigenous People (Anthony & Blagg, 2020; McIntosh & Workman, 2017; Quigley, 2020; Shepherd & Ilalio, 2016; Staines & Scott, 2020; Stanley & Mihaere, 2018; Tubex et al., 2020; Webb, 2017). Young Indigenous People also represent a large percentage of the identified young sex offender population (Adams et al., 2020; Allan et al., 2003). It is therefore important to identify Indigenous participants within studies to ensure this population is inclusive of treatment and that treatment successfully assist in the rehabilitation process. It is also of importance that young sex offenders in remote areas, particularly in Australia, due to the country's geographical vastness, are able to receive treatment for sexual offending. A remote location was classified on the Accessibility and Remoteness Index of Australia (Allard et al., 2016). The following section provides information on evaluations with the inclusion of Indigenous participants and those residing in remote locations. Information on the number of Indigenous and non-Indigenous participants in studies, between groups, and between offence types during the post-treatment follow-up period are further provided. Indigenous offenders are defined as Australian Aboriginal or New Zealand Maori young people who identify as Indigenous or are noted to have Indigenous ancestry.

Table 28 provides binary yes/no information on in relation to studies providing information on Indigenous participants and participants residing in a remote location. Six studies provided some information on Indigenous participants, but only one program provided information on participants in remote locations.

Table 28

Studies Identifying Indigenous Participants and Remoteness

Program	Indigeneity	Remoteness
Australia		
New Street (C)	No	No
Mary Street (C)	Yes	No
GYFS (C)	Yes	Yes
MAPPS (C)	No	No
SOP (C)	Yes	No
PSJJ (C)	Yes	No
New Zealand		
OMIR (C)	Yes	No
TPAR (R)	Yes	No

Table 29 distinguishes between Indigenous and non-Indigenous participants identified in each study. New Zealand had a greater percentage of Indigenous participants completing treatment ($n = 231$, 31.95%) when compared to Australia ($n = 200$, 18.21%). Focusing exclusively on Australia, the Indigenous sample in Mary Street was smaller in comparison to the Indigenous population within the Griffith Youth Forensic Service, which comprised one-third Indigenous participants. More than half of participants attending New Zealand's residential treatment are Indigenous; although, when compared to the other evaluations, the study had a smaller sample size. The community-based study had a larger sample of Indigenous participants and reflected a similar percentage to the Griffith Youth Forensic Service. Overall, young Indigenous sex offenders represented one quarter ($n = 431$, or 23.67%) of the total sample in the six studies.

Table 29

Number of Indigenous Participants

	Number	Percentage
Australia		
New Street (C)	-	-
Mary Street (C)	33	9.0
GYFS (C)	36	34.6
MAPPS (C)	-	-
SOP (C)	36	12.0
PSJJ (C)	95	29.14
New Zealand		
OMIR (C)	205	30.06
TPAR (R)	26	54.17

Notes. The percentage for PSJJ is based on the total sample, which includes non-Indigenous (n = 119) and participants whose ethnicity could not be identified (n = 112). In Mary Street, Aboriginality was coded from the police Apprehension Report; it was based on the opinion of the arresting officer and statements from the youth. Official police statistics for South Australia from 1999 to 2007 report the racial appearance of youth apprehended by the police by type of offence.

One program provided information on the number of young Indigenous participants in the three groups: treatment completers, dropouts, and treatment refusers. Mary Street, the Griffith Youth Forensic Service and NSW Sex Offender Program did not provide such data as the three studies had no comparative groups. The Psychological Service branch of Juvenile Justice had comparison groups but did not provided information on the number of Indigenous participants in these groups. Similarly, Te Poutama Ārahi Rangatahi residential treatment failed to make a comparison between groups. The community-based treatment in New Zealand was therefore the sole program providing information on Indigenous participants within each group, which is displayed in Table 30.

Table 30

Indigenous Between-Groups

	Treatment		Dropouts		Refusers	
	N	%	N	%	N	%
OMIR (C)	42	19.35	52	31.15	111	37.0

Notes. Percentages are calculated as the percentage of Indigenous within the group.

Within the New Zealand community-based study, young Indigenous sex offenders represented a small percentage of the population who successfully completed treatment. Most of the young Indigenous People refused or did not engage in treatment or commenced but later dropped out of treatment (see Table 31).

Table 31

Indigenous Completing, Dropping Out, and Refusing Treatment

	Treatment		Dropouts		Refusers	
	N	%	N	%	N	%
OMIR (C)	42	20.5	52	25.4	111	54.1

Notes. Percentages are calculated as the number of Indigenous compared to non-Indigenous, who completed, dropped out, or refused treatment.

The Psychological Service branch of Juvenile Justice and the Griffith Youth Forensic Service were the only studies to delineate between Indigenous and non-Indigenous when reporting recidivism information. The Psychological Service branch of Juvenile Justice compared Indigenous and non-Indigenous on sexual recidivism findings. While the Griffith Youth Forensic Service made the comparison between the two cohort across sexual, violent or serious, and non-sexual and non-violent offending that occurring during the post-treatment follow-up period (displayed in Table 32).

Similarities were observed between Indigenous and non-Indigenous regarding sexual recidivism. There was a higher chance that young Indigenous sex offenders would recidivate in a violent or serious manner when compared to non-Indigenous. However, Indigenous participants were considerably more likely than non-Indigenous offenders to recidivate non-sexually or non-violently, with more than three quarters recidivating post-treatment. Less than half of the non-Indigenous cohort engaged in non-sexual and non-violent behaviours post-treatment.

Table 32

Indigenous Recidivism Findings

		Indigenous		Non-Indigenous	
		N	%	N	%
PSJJ					
	Sexual	15	15.78	16	13.45
GYFS					
	Sexual	1	2.8	2	2.9
	Violent	12	33.3	11	16.2
	“Other”	29	80.6	32	47.1

Notes. The number of non-Indigenous in PSJJ includes those identified as non-Indigenous (n = 119) and not those where the ethnicity was unknown (n = 112). Also, only sexual recidivism information is provided as other information delineating between Indigenous and non-Indigenous was offences against the person. The authors did not define what constitutes an offence against the person and re-included sexual recidivism into this category. The sexual recidivism rates in PSJJ should be interpreted with caution as the mean follow-up period for Indigenous was longer than for non-Indigenous (M = 4.1 years and M = 3.1 years respectively).

Limited information was presented for study examining the effects of treatment for young sex offenders in remote locations. A remote location was classified on the Accessibility and Remoteness Index of Australia. The recidivism findings of young participants residing in a remote location were compared to young people living in non-remote (metropolitan) locations. Remote participants were less inclined to recidivate sexually when compared to non-remote participants, although more likely to re-offend in a violent

manner. All remote participants engaged in a non-sexual and non-violent offence post-treatment compared to half of non-remote young people.

Table 33

Remote Recidivism Findings

		Remote		Non-Remote	
		N	%	N	%
GYFS	Sexual	0	0	3	3.3
	Violent	3	25	20	21.7
	“Other”	12	100	49	53.3

Notes. It is unknown whether the post-treatment recidivism period differentiated for remote and non-remote participants.

Discussion

The purpose of this project was to explore the characteristics of young sex offender and treatment programs, and the reported effectiveness of treatment as measured by recidivism. To explore this, a comprehensive review of the literature was conducted utilising evaluations in Australia and New Zealand. This resulted in eight studies exploring 10 Australian and New Zealand based young sex offender programs. Limited information provided by evaluations made it difficult to draw conclusions on the most effective program; however, the aim of the review was to report the findings collectively. This discussion chapter explores these findings collectively and how they are situation within the literature.

Characteristics of Young People Attending Treatment

The characteristics of young people attending treatment for sex offending in Australia and New Zealand are consistent with prior systematic reviews and meta-analyses predominately conducted in the United States (Kettrey & Lipsey, 2018; Bitna Kim et al., 2016; Reitzel & Carbonell, 2006; Walker et al., 2004; Winokur et al., 2006). Young non-sex offenders typically engage in antisocial behaviour starting from the age of 10, which peaks at age 17 and decreases thereafter (Fagan & Western, 2005; Farrington, 1986, 2003a; Houghton & Carroll, 2002; Richards, 2011). However, literature internationally suggests young sex offenders index sex offence generally occurs between the ages of 15 and 16 years (Adams et al., 2020; Allan et al., 2003; Bijleveld & Hendriks, 2003; Bischof et al., 1995; Bullens et al., 2006; Caldwell, 2016; Kettrey & Lipsey, 2018; Lisette't A et al., 2009; Robertiello & Terry, 2007; Van Wijk et al., 2005; Vandiver & Teske Jr, 2006), which is consistent with the present sample from Australia and New Zealand. This is further consistent with international findings stating sex offenders, compared to non-sexual offenders, are significantly younger at the time of their first offence (Bischof et al., 1995; Van Wijk et al., 2005). Also similar to published findings, the participants in this study were predominately males who engaged in treatment

for hands-on sex offending (Kettrey & Lipsey, 2018; Bitna Kim et al., 2016; Reitzel & Carbonell, 2006; Walker et al., 2004; Winokur et al., 2006).

The evaluations provided limited and different information on victims. Almost all evaluations provided information on victim gender, finding most young people sexually offended against females, with lower but similar rates in female and male, and male-only victims. The findings are also consistent with literature providing information on young sex offender victim gender (Robertiello & Terry, 2007; Vandiver & Teske Jr, 2006). The details on offender and victim relationship was less available. Of the limited information provided, differences were observed between Australian and New Zealand. Young Australian program participants were more likely to victimise intra-familial, whilst New Zealand victims were known to the offender, but not related. As one only Australian study provided complete information on the offender's relationship to the victim, this finding must be interpreted with caution. The majority of victims in both samples were under the age of 12 years. Characteristics of young people attending treatment in this sample are consistent with other young sex offender demographics.

Treatments Most Evaluated in Australia and New Zealand for Young Sex Offenders

The collective analysis of reported information made it evident that a large amount of missing or limited data is present within evaluations in Australia and New Zealand. Most evaluations provided information regarding the program's primary intervention or the length of treatment, however a minority failed to incorporate this information. These variables have been described as basic variables to report (Schmucker & Lösel, 2017). While the aim of the review was to investigate treatment in Australia and New Zealand collectively, it was difficult to draw conclusions on the reported components of programs that reported the most success in reducing post-treatment recidivism.

The main intervention received by treatment completers in Australia and New Zealand was cognitive-behavioural therapy (CBT). CBT is the most common intervention used for young and adult sex offenders worldwide (Brandes & Cheung, 2009; Grant et al., 2009; B Kim et al., 2016; McGrath et al., 2009; Moster et al., 2008). The treatment is shown to be effective in a range of studies evaluating approaches to reduce sexual recidivism in adult populations (Looman et al., 2000; McGrath et al., 2003; McGrath et al., 1998; Scalora & Garbin, 2003) and in meta-analytic reviews involving young sex offenders (Hanson et al., 2002; Walker et al., 2004; Winokur et al., 2006). Multisystemic therapy was the second commonly reported intervention and was implemented in Australia, but not New Zealand. Like CBT, multisystemic approaches to reducing sexual recidivism have demonstrated positive findings when investigating reduced sexual recidivism (Borduin et al., 2009; Fanniff & Becker, 2006; Henggeler, 2012; Huey Jr et al., 2000).

One evaluated intervention differentiated from the prominent therapeutic models (CBT & MST) utilising Narrative Therapy. The therapy is based on Alan Jenkins' (1990, 2009) synthesis of selected theories of Foucault and Deleuze on abusive behaviours in the context of power relations and influenced by narrative therapeutic practises. The program takes an 'invitational approach' to assist young offenders to develop ethical strivings and a sense of accountability for their actions, in the broader context of family and community relationships (Daly et al., 2013).

While CBT was the primary intervention most reported, it has been suggested that programs based on cognitive-behavioural approaches have different outcomes for Indigenous and non-Indigenous offenders (Macgregor, 2008). CBT is based on contemporary Western methods, although many programs reported using this therapy with Indigenous participants. For treatment to be effective for young Indigenous sex offenders, a range of cultural sensitivity and integration is recommended. Culturally sensitive treatment is crucial to

program effectiveness as it can assist young people to connect with culture (Gutierrez et al., 2018), although particularly effective when the young person has existing ties to culture (Pooley, 2020).

Responding to the treatment needs of young Indigenous sex offenders is challenging. Culturally relevant treatment programs have produced statistically significant findings in reducing recidivism for Indigenous People, when compared to Indigenous People participating in generic treatment programs (Gutierrez et al., 2018). It has also been demonstrated that the blending of contemporary and traditional healing approaches can enhance completion rates and reduced sexual recidivism among Indigenous adults (Rojas & Gretton, 2007). It is crucial for treatment providers in Australia and New Zealand to be culturally sensitive as the criminal justice systems are over-represented by young Indigenous People (Adams et al., 2020; Allan et al., 2003; Anthony & Blagg, 2020; McIntosh & Workman, 2017; Quigley, 2020; Shepherd & Ilalio, 2016; Staines & Scott, 2020; Stanley & Mihaere, 2018; Tubex et al., 2020; Webb, 2017). Although, this may be difficult as there is a long history of anger and mistrust towards social workers and the criminal justice system (Stout et al., 2017).

The quality of information regarding Indigenous participants was generally limited to the sample size within the program. The number of Indigenous participants in Australia was smaller than New Zealand, which may be due to the geographical size of Australia and that young Indigenous people may not be within the proximity of treatment availability. Allard et al. (2016) and Fortune (2007) reported the incorporation of culturally appropriate components for the young Indigenous participants. The cultural competence of program facilitators is critical to creating an effective therapeutic environment (Gutierrez et al., 2018). As a result, treatment providers can readily convey program material in a culturally informed manner that should facilitate uptake. An opportunity to connect with culture can contribute to the creation

of cultural identity, which is a crucial component to achieving healing (Gutierrez et al., 2018). Thus, it is important to assess the young person's level of acculturation to assist in the development and delivery of appropriate treatment strategies (Rojas & Gretton, 2007).

It was reported that participants in the evaluated programs received individual treatment only or individual and group treatment. Individual therapy is used to target specific personal issues that are likely to have contributed to the offending behaviour (Grant et al., 2009). Few evaluations in the review reported the use of individual therapy as the exclusive method of therapeutic intervention. Rather, group therapy has historically been the predominant method to deliver sex offender-specific treatment (Jennings & Deming, 2017). The incorporation of group therapy enhances treatment effectiveness as it provides a supportive environment for specific issues, such as cognitive distortion, victim empathy, social skills, and sex education to be addressed. Group therapy can also foster peer acceptance, reduce isolation, and provide opportunities for social skill development (Grant et al., 2009).

Effective approaches to reduce sexual recidivism should include the young person's ecology and family factors that may contribute to an abusive environment (Grant et al., 2009). It was prominent for evaluations to report on the inclusion of the young person's family in the program. Zankman and Bonomo (2004) note the skills taught to the young person and caregivers constitute the foundation of a relevant and meaningful relapse prevention plan. Together the young person and caregivers learn skills concerning the interruption of a specific interaction pattern that can then be replicated to address other dynamic risk factors when they become identified (Zankman & Bonomo, 2004). Positive effects have been reported with young intra-familial sex offenders in Western Australia, with improvements noted in self-control, social skills, emotional regulation, family communication, and fewer conflicts, with significant improvements on measures of family

functioning (Thornton et al., 2008). Improvements were reported to be more successful when at least one parent was engaged in treatment. From a family perspective treatment can be perceived as building independence away from the required support of a treatment provider; thus, parents learn the necessary skills to interrupt the problematic cycle and require less therapeutic assistance. Findings from the review support the wider literature on effective approaches to the treatment of young sex offenders through the incorporation of family; emphasising the need for treatment to target young offenders and their but family members.

Finally, young people were engaged in treatment for a mean duration of 488 days (approximately 16.04 months). Program attendees in New Zealand were engaged for a marginally longer period of time when compared to Australia. The length of treatment in Australia and New Zealand is similar to systematic reviews and meta-analyses evaluating treatment for young sexual offending in Canada and the United States ranging 13.22 months (Reitzel & Carbonell, 2006) to approximately 16 months (Schmucker & Lösel, 2017; Winokur et al., 2006). Participants primarily engaged in treatment voluntarily, which may explain the high rates of treatment dropouts and refusers as it was not mandatory to complete or linked to a sentence reduction. It should be noted that voluntary treatment is an effective solution to ensuring the intrinsic value of treatment is not lost. That is, young people should not only be attending treatment, but actively engaged in treatment to ensure the rehabilitation process is achieved.

A lack of detailed information in evaluations made it difficult to report the specific components of treatment utilised in those studies reporting a large reduction in recidivism post-treatment. However, findings provide an insight into the prominent therapies used in Australia and New Zealand, the way different modalities are implemented, and how long young people are actively engaged in programs.

Recidivism Rates Following Treatment for Young Sex Offenders

Sexual Recidivism

The evaluated programs were specifically designed to address sexual offending by young people and to cease or reduce sexual recidivism. Recidivism is the benchmark for measuring the effectiveness of an intervention and carries the greatest weight when governments decide whether a program should continue (Stout et al., 2017). One of the most promising findings was all evaluations reported a reduction in sexual recidivism post-treatment. The analysis of evaluations resulted in a sexual recidivism base rate of 6.99 per cent post-treatment. The base rate is defined as the mean recidivism rate in the treatment group and comparative groups, serving as the average for treatment. The Australian evaluations (Allan et al., 2003; Allard et al., 2016; Curnow et al., 1998; Daly et al., 2013; Laing et al., 2014; Nisbet et al., 2004) measuring six programs produced a post-treatment sexual recidivism base rate of 7.63 per cent. In comparison, the two New Zealand studies (Fortune, 2007; Kingi & Robertson, 2007) evaluating four programs produced a sexual recidivism base rate of 5.67 per cent.

The percentage of sexual recidivism during the post-treatment follow-up period in Australia and New Zealand can be compared to other systematic reviews and meta-analyses exploring the effects of treatment for young sex offenders. Sexual recidivism for the sample during the mean 52.57-month follow-up period was 6.99 per cent, with a range of 0.7 to 11.0 per cent. When restricting the data to treatment completers, the sexual recidivism rate was reduced by 0.68 to 6.31 per cent. A meta-analysis by Reitzel and Carbonell (2006) exploring the effectiveness of treatment for young sex offenders, found a 12.53 per cent sexual recidivism rate for the total sample during a 59-month follow-up period. Winokur et al. (2006) acquired a sexual recidivism range of 0 to 5 per cent for treatment completers from seven studies with a mean follow-up period of 72 months. The comparative group of

untreated young sex offenders had a sexual recidivism rate ranging from 5 to 18 per cent. Moreover, Caldwell (2016) produced a mean weighted base rate of 4.92 per cent when examining 106 studies between 1938 and 2015, comprising a sample of 33,783 adjudicated young sex offenders. This reduced to 2.75 per cent when restricting studies to those conducted between 2000 and 2015. More recently, Kettrey and Lipsey (2018) reported a sexual recidivism range of 0 to 12.7 per cent for young sex offenders who completed treatment and 3.7 to 75 per cent for the comparison group.

It was evident that young people who dropped out of treatment in the present sample were more inclined to recidivate sexually. This is in comparison to treatment completers and those who refused or failed to initiate the treatment process. Dropouts may be inclined to re-offend due to pre-existing characteristics associated to recidivism, such as impulsivity or unstable lifestyles. There is also the possibility that a disruption in treatment can make an offender worse (Hanson et al., 2002). This is a consequence of the initial stages of treatment introducing young people to deviant role models, cognitive distortions, and a range of novel, deviant sexual fantasies and behaviours (Hanson et al., 2002).

Non-Sexual Recidivism

Although programs were designed for sexual offending, most evaluations also reported non-sexual recidivistic behaviours post-treatment. The rates of reported non-sexual recidivism were higher than sexual recidivism. Most programs classified non-sexual recidivism into two categories: violent or serious recidivism and non-sexual and non-violent recidivism. The overall rate of violent or serious recidivism for participants in studies providing the information was 21.52 per cent, reducing to 13.33 per cent when restricting data to treatment completers. Thus, demonstrating the reported efficiency of treatment in reducing other violent or serious offending post-treatment. A reduction in violent or serious recidivism post-treatment for young sex offenders has been observed within the evaluation

literature (R. K. Hanson et al., 2009; Hanson et al., 2002; Kettrey & Lipsey, 2018; Lösel & Schmucker, 2005; Reitzel & Carbonell, 2006; Schmucker & Lösel, 2017; Winokur et al., 2006). Furthermore, the overall rate of non-sexual and non-violent recidivism was 48.55 per cent for evaluations reporting the information. The overall rate reduced to 23.66 per cent when exclusively focusing on treatment completers.

Worling and Langstrom (2006) note young sex offenders are more inclined to be apprehended post-treatment for recidivistic behaviours that are non-sexual. However, young people who dropped out of treatment are more inclined to recidivate violently or seriously, and non-sexually and non-violently, when compared to treatment completers. Similarly, treatment dropouts engaged in more violently or seriously, or non-sexually and non-violently offending when compared to young people who refused or could not engage in treatment. These effects may be associated to a program inability to effectively keep young people engaged in the program. This is an important finding given the lack of reported information on safety nets in place for young people who drop out of treatment.

It is imperative to focus on the source of the data and the length of the follow-up time when drawing conclusions about repeat offending. Recidivism data can come from official information sources or be self-reported. All evaluations reported official sources, such as police or government agencies, as a method to obtain recidivism information. A criticism of restricting recidivism information to official sources is the inability to capture crime that does not come to the attention of the criminal justice system (Piquero et al., 2014). The use of both official and self-reported measures can offer two different but complementary ways of measuring recidivism, as each approach offers a unique advantage. Various studies have reported higher rates of recidivism when including self-reported information (Abel et al., 1987; Binik et al., 1989; Bourke & Hernandez, 2009; DeLisi et al., 2016; Freeman-Longo, 1985; Groth et al., 1982; Mathesius & Lussier, 2014; Weinrott & Saylor, 1991). Thus, self-

reported information should be incorporated for a more accurate recidivism measure as information obtained anonymously and held confidential from legal authorities yields more valid results than the sole use of official documentation (Weinrott & Saylor, 1991).

Again, it must be noted that the length of follow-up time is also important to consider when interpreting data. Worling and Langstrom (2006), state the generalisability of empirically derived recidivism base rates is dependent on the length of the follow-up period. The mean average recidivism duration across all studies equated to a follow-up period of 4.38 years, which is short in comparison to other research reporting follow-up periods between 5 to 25 years (Borduin et al., 2009; Caldwell, 2016; Hanson et al., 2002; Levenson & Prescott, 2014; Looman et al., 2000; McGrath et al., 2003; Schaeffer & Borduin, 2005; Winokur et al., 2006). A significant linear relationship has been observed between the length of follow-up period and sexual recidivism (Worling & Langstrom, 2006), therefore higher sexual recidivism rates are yielded when follow-up periods are increased. The relationship observed for sexual recidivism is also observed for general non-sexual criminal recidivism. This is illustrated by Maletzky and Steinhauser (2002), monitoring 7,000 adult sex offenders who received cognitive-behavioural interventions with recidivism measured over a 25-year period. The authors found recidivism rates to remain generally low in the first 6 to 12 months post-treatment, although doubling in the first 5 years and remaining steady thereafter. Individuals convicted of rape were the outlier with continued rates of sexual recidivism until the 8th and 10th year. Thus, longer follow-up periods are logically related to higher rates of recidivism, both sexually and non-sexually. A longer follow-up period allows for more influencing factors to potentially impact the life of the young person and reduce the effect of treatment.

Indigenous and Remote Recidivism

The reported post-treatment sexual recidivism of Indigenous participants was examined to compare to non-Indigenous. Two programs provided information distinguished

between Indigenous and non-Indigenous sexual recidivism rates. The percentage of young Indigenous people who sexually re-offended is consistent with young non-Indigenous participants. However, only one program measured the violent or serious and non-sexual and non-violent recidivism rates of Indigenous participants. Indigenous participants were more inclined to recidivate in both a violent or serious, and non-sexual and non-violent manner. The percentage of Indigenous participants who recidivated violently or seriously during the follow-up period was double that of non-Indigenous participants. Information on the recidivist behaviours of Indigenous participants is an important factor requiring incorporation into the evaluation research. Integration of more detailed information would assist in ensuring the treatment delivery is suitable to successfully rehabilitate and meet the needs of young Indigenous sex offenders.

This restricted information is consistent with limited information on reported outcomes of treatment for young people that reside in a remote location. Remoteness may be less of an issue in New Zealand when compared to geographic vastness of Australia's landscape. Only one Australian program reported the recidivistic offending of remote participants post-treatment. Using the Accessibility and Remoteness Index of Australia, Allard et al. (2016) classified locations as remote based on the distances required to travel to centres to access goods and services, which would otherwise be classified as normal for participants residing in metropolitan areas. That one evaluation reported treatment to be effective for both remote and non-remote young people with only a minor variance for sexual and violent or serious recidivism. However, the variance concerning non-sexual and non-violent recidivism is large. All young people in the remote cohort engaged in non-sexual and non-violent re-offending, in comparison to approximately half of the non-remote cohort during the same follow-up period. This may be reflective of young remote participants being more likely to have engaged in non-sexual and non-violent offending prior to their

participation in treatment. Nonetheless, the information provided by Australian and New Zealand evaluations ensures a reported effectiveness of treatment to reduce sexual and non-sexual offending behaviours when effectiveness is measured by rates of recidivism post-treatment.

Quality of Evaluation Research Regarding Young Sex Offender Treatment Programs in Australia and New Zealand

Measuring the reported effectiveness of treatment for young sex offenders is complex with various challenges confronting evaluators. The quality of studies in the review was assessed using the Maryland Scientific Method Scale (SMS), which ranks the methodological quality of studies on a five-point scale. The findings from the SMS are re-presented and the impact of the scores on the present review discussed. Conclusively, the SMS ratings are discussed in relation to the research designs used for conducting evaluation research on sex offender populations and limitations of the evaluations addressed.

Challenges Examining Study Quality

The inclusion criteria for the present study had no limitations on the methodological quality of evaluations. This approach ensured a representative sample of the available evidence was obtained. The strategy differentiates from a recent systematic review and meta-analysis investigating treatment for young sex offenders, which restricted studies to those of high methodological quality; namely randomised control trials (RCT) and quasi-experimental designs (Kettrey & Lipsey, 2018). Restricting the inclusion of studies to those of high methodological quality inevitably restricts the number of studies included in the review. Consequently, difficulties regarding generalisations and drawing conclusions arise when reporting on a small sample of studies, making it difficult to communicate information with policymakers. Despite the present review's relaxed methodological quality requirements, it is

crucial to evaluate the methodological quality of the included studies (Farrington, 2003b; Oremus et al., 2012; Uman, 2011) to ensure honesty in the interpretation of the findings.

The Maryland Scale is depicted as the most influential methodological quality scale in the field of criminology (Farrington, 2003b), and uses a 5-point scale for simplicity in communicating scores. A score equating to three or above demonstrates a robust comparison group design and provides enough evidence to demonstrate the program has caused the reported effect (Sherman et al., 1997). Five of the eight studies demonstrated scores equating to level three or higher: two ascertaining a level four (Fortune, 2007; Laing et al., 2014) and three awarded level three (Allan et al., 2003; Curnow et al., 1998; Kingi & Robertson, 2007). For level three and four studies, reported group allocation was predominately ‘naturalistic’ as participants were allocated to a group based on whether they completed, dropped out, or did not partake in treatment. There are also methodological vulnerabilities associated with treatment dropouts and refusers. Using these groups to measure the effectiveness of a treatment program against young people who completed treatment creates an inherent bias in motivation for intervention (Levenson & Prescott, 2014). More so, the causal inference of treatment for the cohort of young people that were successful in completing the program can not be observed in those who dropped out or refused treatment. However, observations can be made regarding the negative effects of not completing treatment through the recidivism rates of young people in these cohorts.

The remaining studies were below the threshold and awarded level two (Allard et al., 2016; Daly et al., 2013; Nisbet et al., 2004). These studies were considered the minimum interpretable design adequate for concluding what works (Cook & Campbell, 1979; Farrington, 2003b; Farrington et al., 2003). They generally tracked, or retrospectively analysed, a treated sample of young sex offenders and reported the group’s sexual recidivism rates. This was completed without a comparative group of non-treated young sex offenders.

The consequences of conducting uncontrolled designs are threats to internal validity as researchers are unable to examine the effect of no treatment in a comparative sample to those receiving treatment.

Internal validity is the isomorphism of findings with reality; that is, the faithful representation of findings reflecting the reality being studied and the degree to which an individual can ascribe the observed differences between groups (Harkins & Beech, 2007; Punch, 2013). As these studies were deficient in a comparative group, it cannot be determined that differences observed are due to the intervention and no other possible factors (Harkins & Beech, 2007). However, these studies were included in the review as they provided recidivism information to be compared with other evaluations. In research generally, there has been a strong emphasis on the use of randomised control trials (level five), described as the “gold standard” of research design (Gallo, 2020). No identified evaluation was awarded the gold standard level five score from the Maryland Scale, although results are of quality due to the inherent methodological challenges when measuring treatment outcomes for sexual offenders.

Långström et al. (2013) acknowledged the lack of methodologically strong (randomised controlled trials) research with individuals at risk of sexually abusing children, emphasising the logistic, legal, and ethical challenges attributed to designing such studies. These challenges and inherent issues derived from conducting RCTs with sex offender populations have been communicated in-depth by Marshall and Marshall (2007). First, it may be assumed that a matched sample will be created from random allocation of participants; however, it is unlikely as the dynamic and static risk factors of sex offenders are too extensive (Marshall & Marshall, 2007). Notwithstanding this, withholding treatment from sex offenders who want treatment based on random allocation may cause unknown risks to the community (Levenson & Prescott, 2014) and potentially cause psychological distress

(Marshall & Marshall, 2007). Increased offender distress could occur as a result of such instances as denied parole or other related circumstances, which come from a lack of engagement in treatment. The psychological disposition of the control group would also negate any matching process, as typical RCT designs employ a placebo for control groups, which is not plausible on sex offender treatment (Marshall & Marshall, 2007). Finally, according to the RCT design, offenders who are withheld from treatment should receive therapy as early as possible; typically occurring after a reasonable follow-up period to measure relapse. Sex offenders have relatively low relapse rates, and a minimum five-year follow-up period would be essential in a typical treatment study. Therefore, this approach would consequently result in the untreated group waiting a minimum of five-years to receive treatment for sexual offending (Marshall & Marshall, 2007).

Smith and Pell (2003) performed a satiric evaluation of parachute effectiveness to demonstrate the difficulties of ascertaining the gold standard of experimental design. The study tested the idea that researchers believe observational data must be verified with RCTs due to accusations of data dredging, confounding, and bias. The comprehensive literature search revealed no RCTs on the effectiveness of parachutes in preventing death and injury to humans. In conclusion, they proposed two options to conceptualise the issue; the first being researchers accept that, under exceptional circumstances, common sense might be applied when considering the potential risks and benefits of an intervention. The second option proposed is for those who continue to criticise interventions deficient of an experimental design to “demonstrate their commitment by volunteering for a double-blind, randomised, placebo controlled, crossover trial” testing the efficacy of parachutes (p. 1460, Smith & Pell, 2003). Scholars have suggested using other types of research designs, such as incidental and cohort studies (Hanson et al., 2004; Marshall & Marshall, 2007).

Therefore, the lack of an RCT design in the present review does not necessarily correlate to a study limitation. A recent systematic review using methodologically strong evaluations of treatment programs for young sex offenders between 1950 and 2015 identified only eight eligible studies (Kettrey & Lipsey, 2018). Of these eight, only one study utilised a randomised controlled design. The finding may be an admission by program evaluators that the gold standard of research design may not be the most appropriate for young sex offenders. Rather, observational methods are a more efficient strategy.

Limitations of Evaluations

In many areas the evaluations had insufficient or no information regarding the way treatment was delivered, which may affect the outcomes of reported success. Evaluations did not report information on treatment integrity, issues related to treatment delivery, or whether aftercare services had been offered to participants post-treatment. Aftercare services may have a positive effect in reducing post-treatment recidivism as participants and their families continue to be engaged in a formal service outside the intervention. There was also insufficient information on services offered to those young people who dropped out of treatment. This is an important consideration as in this review young people who dropped out of treatment were more inclined to recidivate in a sexual, violent or serious, or non-sexual and non-violent manner.

There was also insufficient information presented on the characteristics of treatment in the programs. It may be assumed that the reported use of cognitive-behavioural and multisystemic therapy initiated the desistence process, causing a decrease in sexual recidivism. Limiting information to the type of therapy used, such as CBT, does not explain the cognitions and behaviours targeted for change or the areas of functioning selected for change. Providing detailed information on the specific components of therapy used for the sample could explain why the same treatment applied in two different studies did not have

the same effect. Furthermore, most evaluations neglected to report a comparison between varying groups. There are several aspects to which comparative measures could be reported to provide valuable information between characteristics.

Six evaluations reported the number of Indigenous participants within the sample but failed make that comparison between the recidivism rates of Indigenous and non-Indigenous young people. Whether treatment for young sex offenders in Australia and New Zealand serves the needs of young Indigenous People is unknown. Considering Australia and New Zealand's criminal justice systems are over-represented by Indigenous people and individuals with Indigenous heritage, it can be suggested that the lack of information on this cohort is a major limitation. The evaluations also lacked a comparison between young hands-on and hands-off offenders, thus participants attending treatment for penetration and child pornography offences are conceptualised as a homogeneous group. Differences between hands-on and hands-off sex offenders regarding aetiology and motivation, patterns of offending, and consequently treatment needs, are well documented in the literature (Andrade et al., 2006; Aslan & Edelmann, 2014; Babchishin et al., 2011; Gallo, 2020). These two sexual offender types vary on multiple levels; however, information on treatment effectiveness for both cohorts is absent. Additionally, a distinction between victim type and recidivism was not reported. This is despite young people attending the programs for victimisation that was intra-familial, extra-familial, or against a stranger.

Research on the efficiency of sex offender treatment is designed to identify associated changes in recidivism post-treatment (Gallagher et al., 1999; Hanson et al., 2002; Lösel & Schmucker, 2005). The magnitude and statistical significance of participants' mean change at a pre-treatment and post-treatment group level is used to understand a program's reported effectiveness (i.e. recidivism). As evaluations did not report treatments ability to cease all sexual offending, this provides an indication that all treatment completers did not derive the

same benefits. Therefore, there is a requirement to assess changes in proximal outcomes (i.e. treatments ability to produce changes in dynamic risk factors), with more valid approaches to the investigation of benefits that specific offenders have derived from treatment at completion (Nunes et al., 2011; O'Brien & Daffern, 2017). Although results may be encouraging at a group level, such analysis does not provide a complete understanding of treatment effectiveness as some individuals recidivate post-treatment (Nunes et al., 2011).

Shifting attention to the assessment of intra-individual changes may provide a more accurate representation of treatment efficacy. Measuring various other program outcomes in addition to recidivism can provide a more sensitive, comprehensive and nuanced consideration of what assists young people along their path to desistence (Pooley, 2020; Stout et al., 2017). This could include intra-individual changes derived from measures of psychological and behavioural change, such as decreased anxiety, depression, or other psychological symptoms, increases in the effective use of coping skills in dealing with psychosocial stressors, improvements in sexual and general self-regulation, and the use of strategies to meet psychological and emotions needs in healthy, non-harmful and adaptive ways (Levenson & Prescott, 2014). But also include readiness to change, educational engagement, employment attainment and, relationship and prosocial engagements (Pooley, 2020).

The evaluations also neglected to incorporate therapist characteristics and other factors to measure treatment effectiveness, such as measures of engagement, investment, participation, or successful integration of treatment concepts. This is important to understand what works for whom so treatment providers can move beyond administering content and assist sex offenders to invest in the treatment process, with a belief that change is desirable, possible, and attainable (Levenson & Prescott, 2014). This includes: *collaboration* with program attendees to define the problem and determine an effective solution; *empathetic*

engagement from the program deliverer; *optimism and identification* of long-term goals; and a *genuine* interest in understanding the participants' experiences (Jennings & Deming, 2017; Levenson & Prescott, 2014; Stout et al., 2017). Treatment providers should invest in facilitating behaviour change and base the service around the participants' strengths and needs. A positive relationship between young people and the treatment provider is crucial to program effectiveness and should be based on openness, humour, respect, and clarity; where the main purpose of the interaction is to reinforce protective factors that enable a young person to desist from offending (Pooley, 2020). It is difficult to ascertain from the present review whether success has truly been achieved if evaluators cannot conclude that the treatment itself has been administered effectively. Measuring treatment delivery would also provide an explanation of why some programs reported less recidivism when based on similar therapies. Finally, this would be beneficial to understanding the impacts of treatment and the effects of incorporating culturally trained staff to deliver services to Indigenous participants. The lack of information on program delivery for Indigenous participants and the prospect of incorporating this information in studies may be an ambiguous idea considering the absence of information on the effects of treatment for Indigenous participants.

The paucity of information in relation to possible unknown and known recidivistic behaviours was another limitation. Unknown recidivism stems from evaluations exclusively reporting on official data from police, a government agency, or both. True recidivism measures should incorporate self-reported data as official reports do not capture crime that has not come to the attention of the criminal justice system (Australian Institute of Criminology, 2011; Weinrott & Saylor, 1991). There was also information on recidivism that was potentially known, but not reported. One evaluation did not incorporate data on young people charged with an offence during the follow-up period. A consequence of this missing information is young people may have received a charge for offending, although the outcome

had not been finalised in court. Consequently, recidivism information was limited to offences that have come to the attention of the criminal justice system, and, in some circumstances, only those offences that had been finalised in court.

Finally, it is conceivable that research on treatment for sex offenders is held to a higher standard than other evaluation research, due to the harm caused to victims of sexual assault. Consequently, there is the expectation that lifelong remission will occur post-treatment and shorter follow-up periods will assist in achieving this outcome. The present review had a short follow-up period of 4.38 years when compared with other follow-up periods ranging between 5 and 25 years (Borduin et al., 2009; Caldwell, 2016; Hanson et al., 2002; Looman et al., 2000; McGrath et al., 2003; Schaeffer & Borduin, 2005; Winokur et al., 2006). Higher rates of recidivism are logically observed in studies with longer follow-up periods, although the present evaluations are interpreted as effective with low levels of sexual recidivism. A few evaluations reported a mean follow-up period of less than three-years, with a range showing participant tracking was restricted to 5 days. Thus, the idea that additional cases of sexual recidivism could have come to the attention of the criminal justice system is conceivable. Treatment for sexual offenders involves complex interactions with effectiveness reliant on the offender's motivation and ability to change, and the skill of the program implementer in reducing resistance and barriers to engagement (Levenson & Prescott, 2014). Exposing treatment to lengthier follow-up periods may be a more effective measure for the outcome variable of sexual recidivism. Furthermore, recidivism should be measured at multiple points in time to understand at what point the effects of treatment begin to diminish.

Strengths and Limitations

The search strategy enabled eight studies evaluating 10 treatment programs for young sex offenders in Australia and New Zealand to be identified, meeting the pre-determined inclusion criteria. The strategy was built from keywords used and tested in prior systematic reviews and meta-analyses and organised using the PICO method. This strategy made it possible to identify the target population, intervention, a comparison, and a reported outcome. The Edith Cowan University Information Specialist also provided an independent assessment of the search strategy to ensure required studies would be encapsulated within the results.

Other forms of bias, such as those associated with publications, were taken into consideration. To strengthen the review, grey literature was incorporated to reduce location bias as studies can be published outside bibliographic databases (Boland et al., 2017). Reviews exclusively including published studies can yield significant results and higher effect sizes more often than the un-published studies, which has been noted as the ‘file draw effect’ (Rosenthal, 1979). Grey literature was integrated into the review by searching areas other than published and peer-reviewed journals, including unpublished dissertations, reports, books, and conference abstracts from a range of sources. Some systematic reviews are approached cautiously due to varying characteristics within individual studies; however, the present review was consistent for several characteristics.

Firstly, the studies focused on young sex offenders with programs aiming to reduce sexual recidivism. These programs were also administered in the community, apart from one New Zealand residential program, and required voluntary participation. Similar offender characteristics indicated most participants were male, between 15 and 16 years of age, and had committed a ‘hands-on’ sexual offence against a female victim under the age of 12 years old. All studies used the same measure of effectiveness by quantifying sexual reconviction data, which was defined as a charge or conviction retrieved through police and official

records. Finally, the quality of studies included in the review were assessed to acknowledge limitations within individual evaluations, therefore providing an adequate understanding of the information to draw honest conclusions. While there are strengths, limitations were also found.

Effort was made to reduce biases; however, there was the potential that bias may have been introduced. The evaluations lacked information concerning author affiliation, which can influence the outcome. There is the possibility that affiliated program authors may be reluctant to report negative results and selectively analyse and publish favourable outcomes. Furthermore, author affiliation can enhance treatment integrity. Results can be inflated as affiliated authors may be more invested to ensure a higher standard of program implementation. In a meta-analysis of sex offender treatment, three-quarters of studies reporting positive indicators of treatment integrity came from authors affiliated with the program (Schmucker & Lösel, 2017). As the studies in the present review did not report author affiliation, it is important to acknowledge that risk. Additionally, authors of evaluations and experts in sexual offending were not contacted as part of the current systematic review for potential unpublished studies, or their knowledge of evaluations that had not been identified. Regardless of the limitations, the present review contributes to academic knowledge.

Implications and Recommendations

The present research project was the first systematic review to investigate the characteristics and reported effectiveness of treatment programs for young sex offenders in Australia and New Zealand. The study provided information on treatment programs, participants, and offending following treatment. However, it cannot be confidently stated that interventions in Australia and New Zealand were effective for Indigenous populations. This section provides the recommendations for more detailed and nuanced information in treatment evaluations in the future.

Offender Characteristics

To allow for an effective evaluation of young sex offender treatment, future evaluations require detailed information regarding the offender. It is important to have an in-depth understanding of the cohort attending treatment to decipher if participants are a homogenous or diverse group. At a minimum, details should be provided on the offenders: age, gender, ethnicity, Indigenous status, location (remote or non-remote), and family characteristics. The latter may be inclusive of information concerning the young person's living arrangements and whether they are in the care of biological parents, other immediate family or an out-of-home care service.

Victim Characteristics

Victim characteristics regarding the age, gender and relationship to offender should be collected. Relationship information should be divided into three categories: intra-familial, extra-familial, acquaintance or stranger. Data on the victim's relationship to the offender can assist in building a profile of young people attending treatment.

Offence Characteristics

To measure program efficacy on different offence types, data regarding the young person's general and sexual offending history is required. This prior offending information

should incorporate details of any treatment programs the young person has previously attended. With this information, evaluators can assess the overall level of risk for treatment attendees. Current offence type should be documented. To allow for the heterogeneity of sexual offending, information should be separated into ‘hands-on’ and ‘hands-off’ offending. Finally, it should be noted whether the young person offended in a group or as an individual. A comprehensive understanding of the young person’s prior offending and index sexual offence will provide an insight into static risk factors that may have contributed to the young person’s offending.

Treatment Characteristics

Future evaluations should continue to report the type of treatment received by participants (i.e. CBT, MST), but should also report the specific aspects of treatment. For example, providing the specific approaches of CBT used in treatment, such as the techniques employed to restructure incorrect cognitions, and the types of role-play or behavioural rehearsals implemented. This is particularly relevant for programs that may blend contemporary treatment (such as CBT) with Indigenous culture. Providing detailed information on the specific components of therapy in evaluations will assist research and practise to replicate effective treatment programs across settings. At present, there is an inability to do this as the components of treatment are not reported.

Furthermore, additional treatment characteristics should be collected: program length, individual or group therapy, the inclusion of family, participation type (voluntary or mandated). A complete understanding of the characteristics that are specific to a treatment program will also assist in replication. Finally, information pertaining to the characteristics of therapists or program implementors should be collected and provided within the treatment section. Therapist attributes, such as qualifications and level of experience, may assist in interpreting the effectiveness of treatment. There should be further inclusion of tools to

measure program delivery and the environment and relationship between the young person and program facilitator. Given the understanding that programs ‘are only as good as the manner to which they are delivered’, this could provide important information relating to differences in participants ability to derive the benefits of an intervention.

Recidivism Characteristics

Analysis of Recidivism Data

Evaluations should be conducted with the primary purpose of investigating sexual recidivistic behaviours post-treatment; but incorporate violent or serious, and other non-sexual and non-violent offending. Distinctions should be made beyond that of sexual, violent or serious, and non-sexual and non-violent offending post-treatment. When assessing these recidivistic behaviours, future research should incorporate self-reported information for a more accurate measure of re-offending. Comparisons can also be made between official data and self-reported data to quantify the number of sexual offences that have not come to the attention of the criminal justice system.

Future research should aim to incorporate between-group comparisons. For example, examination of treatment effects for hands-on and hands-off offenders. Acknowledging the growth of modern technology is of increasing importance to understand the effects of hands-off offending, such as involvement in and dissemination of child pornographic images. Depending on the location, future evaluations should consider the cultural make-up of the population to ensure it is effective for differing cultural groups. For Australia and New Zealand, this would involve between-group comparisons for Indigenous and non-Indigenous participants. There should also be a focus on collecting the information of minority groups that may be over-represented in the criminal justice system. Such a comparison would confirm that treatment is effectively meeting the needs of the population it is targeting.

Measuring Recidivism

During the prescribed follow-up period, a timeline of offence-specific data should be used to understand the distribution of recidivism. Investigating when young people are most likely to recidivate post-treatment may provide insight into whether, and when, the effects of treatment begin to diminish. This knowledge would permit individuals working with the young person to engage services post-treatment or treatment programs to offer a continuing care to young people. In conjunction with the measurement of recidivism, future research should use psychological measures of intra-individual behaviour change at a pre and post-level.

Revisiting Previous Evaluations to Measure Recidivism Longitudinally

The recidivism outcomes for offenders included in the original evaluations utilised for this review should be followed up to determine whether the effects of treatment continued long term. An examination of official police and court records would result in a longer follow-up period, providing a more comprehensive understanding on the long-term effects of treatment. For example, Allan et al. (2003) acquired recidivism data between 1990 and 1998. The re-examination of participants recidivism information would now produce a follow-up period of 22-30 years and demonstrate the effects of treatment longitudinally.

Indigenous Data

The information regarding Indigenous participants, cultural components and sensitivity of programs, and offending behaviours of Indigenous participants occurring post-treatment in the present review were limited. Future research should address the absence of information regarding young Indigenous sex offenders, which will assist in improved knowledge of treatment efficacy for Indigenous People. Furthermore, this will assist in ‘closing the gap’ on recidivistic outcomes between young Indigenous and non-Indigenous offenders in future evaluations. The collection and analyses of this data will allow future

research to confidently state the effectiveness of treatment and allow recommendations for treatment of this population.

Conclusion

It is of great importance that treatment programs for young sex offenders are effective in initiating behavioural change that will reduce or cease recidivism. Given the severity of consequences associated with sex crimes, particularly the associated negative implications for victims and their families, interventions for sex offenders are held to a higher standard. Therefore, the expectation is that treatment for sex offenders should have an immediate effect. It is evident from this study that some young people in Australia and New Zealand commit sexual offences. The findings from the present review were compared to international literature, aligning with results from Canada and the United States. It explored whether evaluations included Indigenous populations, and, if so, whether treatment was effective for both young non-Indigenous and Indigenous sex offenders. However, due to lacking information, it cannot be confidently concluded that treatment in Australia and New Zealand is effective young Indigenous sex offenders.

Overall, results from the collective analysis support the reported efficacy of treatment for young sex offenders in Australia and New Zealand. The successful completion of treatment was associated with positive effects for reducing sexual offending and further reducing violent or serious offending, and non-sexual non-violent offending post-treatment. While all treatment programs reported a positive effect on reducing recidivism for young people who engaged in treatment, the impact on young Indigenous offenders and those people residing in a remote location is not known. This review provides a suitable base of knowledge and understanding on the effects of treatment for young sex offenders in Australia and New Zealand. What could not be ascertained from the review was the nuanced and detailed effectiveness of the treatment programs for different offenders, of different ethnicities, in different locations and different types of sexual offending over time. The lack of detail in the reported data meant that only a crude measure of recidivism could be

presented. To enable more detailed information this project concluded with recommendations for data collection on treatment programs which can be applied to a wider variety of criminological evaluations.

Acts

Crimes Act 1914 (Cth) ss 4M, 4N

Children (Criminal Proceedings) Act 1987 (NSW) s 5

Criminal Code 2002 (ACT) ss 25, 26

Criminal Code Act 1983 (NT) ss 38(1)–(2)

Criminal Code Act 1899 (Qld) ss 29(1)–(2)

Criminal Code Act 1924 (Tas) ss 18(1)–(2)

Criminal Code Act 1995 (Cth) ss 7.1, 7.2

Criminal Code Act Compilation Act 1913 (WA) s 29)

Children, Youth and Families Act 2005 (Vic) s 344

Children, Young Persons, and Their Families Act 1989 section 272, 1, a

New Zealand Bill of Rights Act 1990

Young Offenders Act 1993 (SA) s 5

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Appendix

Appendix 1

Standard Literature Search Strategy

(Youth OR Young OR (Young AND Adult) OR Delinquen* OR Juvenile* OR Adolescen* OR Male* OR Female* OR Boy* OR Girl* OR Child* Offend* OR Sex* OR Indigenous OR Aboriginal) AND (Progam* OR Treatment* OR Interven* OR Correcti* OR Therap* OR Counsel OR Counse#ing OR Mentor* OR Rehabilitation* OR Cogniti* OR Relapse OR Intensive OR Incarcerat* OR Court* OR Probation* OR Parole OR Mandated OR Inmate* OR Institution* OR Non-Institution* OR Prison* OR Communit* OR Detention) AND ((Treatment AND Refus*) OR (Treatment AND Dropout*)) AND (Effect OR Outcome OR Eval* OR Experiment* OR RCT* OR Randomi#ed Control Trial OR Quasi* OR Trial* OR Empirical* OR Recidiv* OR Reoffen* OR Reconvic* OR Behav*)